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software

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FIRST NEWS • FIRST REVIEWS • BEST BUYS • YOUR WEEKLY GUIDE

AMIGA



CDTV UPDATE

THE FIRST ADD-ONS
AND TITLES Emerge

ATARI



MIDI MAYHEM

ALL THE NEWS FROM
THE UK'S TOP SHOW

GAMES



PREDATOR 2

THE HUNT CONTINUES
PLUS - A NEW TETRIS!COMPUTER
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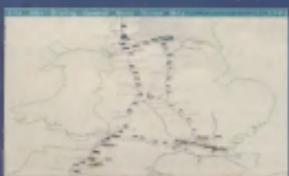
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First full review of the friendliest front-end ever

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DO YOU NEED THE BEST
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Frontend

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Mannequin is Coming

CAD GETS THE HUMAN TOUCH

What you see here is just a sample of the output available from Mannequin, the computer aided design (CAD) program which generates true human movement (first reported in Express last week).

Ken Goodman is the vice president and general manager of HumanCAD, the company set up to market the product. He explained the gap in the

market: "We created Mannequin because many of today's products do not fit the needs of individual customers. Too often customers tolerate products that are too small, too large, uncomfortable, or unsafe."

Mannequin allows designers to incorporate actual human figures into projects in order to create products with humanity. ■

Easing disk-stress

A UK company called Psychos is distributing software called 'Total Stress Management Systems' for PCs and Macs. What comes, of course, from the US. The company claims that it replaces the UK's traditional stress reliever... "The pit bull". Price is £18.75. Phone 021-322-278. If you're not too stressed out that is. ■

Show starters or stoppers?

Telly addicts can now get transcripts of live shows, just hours after they go off air, sent via PC or fax.

Live talk shows and newscasts are advertiser-filled experiences which are aimed at holding the viewer's attention on the off chance that something untoward might happen. David Lee being laughed at on *Log On*, and Grace Jones physically lashing out at the late Russell Harty are just two fine examples! Now you can use your PC to peer over the goings on, and analyse the contexts.

An American company called Comtec, is offering PC users, the chance to sign on to what it calls the Topic Net service. You pay \$95 a month and are linked into a database of scripts which date back to 1986.

The user is treated to daily alerts if a topic of interest has come up in shows, which they have missed. The data can be automatically downloaded, via fax or PC. For more information call: 0101 203 964 0096. ■



If the Americans have their way, you may be getting fed on your fax!

GET REAL! Free computers!

American multi-national AT&T is giving away fully equipped computer laboratories to 47 American colleges. This philanthropic gesture will cost the company a staggering \$4.2 million.

AT&T takes charity seriously, having had an Equipment Donation Program since 1984. However, this system will only be supplied on an 'as needed' basis.

The new initiative will provide off the peg labs comprising 18 AT&T 6300SX/81 PCs linked via a local area network (LAN) to a host server, to selected educational establishments. Of course all the equipment will have AT&T plastered on it. ■

GET REAL!



Lucy in the Sky with Mindscape

If Pete Best owns an Amiga, a CDTV or a Nintendo Entertainment System (NES) he's probably kicking himself now. For those people who don't know, Mr Best was the man who was kicked out of the Beatles and replaced by Ringo. The reason he might be so naked in that Mindscape has bought the rights to 12 of the Fab Four's greatest hits for use on the teach-yourself-please system, the Miracle.

The songs are: Michelle, Here There and Everywhere, Let Love Mar, She Loves You, We All Love in a Yellow Submarine, Strawberry Fields Forever, You've Got It, Hide Your Love Away, Norwegian Wood, She Loves You, Hey Jude, Penny Lane, and the druggy Lucy in the Sky With Diamonds.

The Miracle is a plug-in musical keyboard, developed in the United States as an interactive teaching tool for building plants. Plans are now out to extend it both to the PC and Amiga. A CDTV version is also in the offing. The NES version costs £349. For more information, call Mindscape on 0444 833545. ■

Computers send dour Dow down



If in doubt, blame the computer. That's exactly what 'experts' on the New York Stock Exchange have been doing in much of the financial press.

With the Dow Jones falling

its tickering regularity of late, a call has been going up for "It's the automated convoluted trading". Makes you wonder what they blamed for the Wall Street Crash of 1929 – the ticker-tape machine, perhaps? ■

LIVERPOOL RESOURCES

Liverpool City Council, in view of dynamite Del Boy Trotter, is to become agile. This time it has been issued with a wild and crazy programme for computer regeneration.

The controversial council is spending £1.177.72 in a Mindscape computer system. The equipment, which was provided by NEC, is being used in council offices. NEC's



spokesmen said: "We will either take the matter to court or make an out-of-court settlement depending on what we use it for." ■

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GET REAL! It's a laugh

A computer system has been designed to help people suffering from Parkinson's disease to smile again. Research has shown that smiling is the most important facial expression in any relationship. It is a fact that many sufferers from depression, Parkinson's disease, strokes and speech difficulties, find it difficult to smile.

The new system analyses video-taped images of people smiling – the patient is filmed and the data is taken from these tapes and incorporated into a mathematical model of the face held on a computer. The model can then be restructured to form a non-smiling face into a happy one on screen.

When the patient is shown their image, all they then have to do is to copy it and they're smiling.

It's certainly a step forward from the old system, which involved attaching electrodes to the victim's face. ■

GET REAL!

Police units worldwide can now buy into the Fingermatrix system which has become a staple of US law enforcement agencies. NEC has agreed a marketing initiative which could see every detective from Charlie Chan to Inspector Morse, via Clauseau using the system.

Fingermatrix is used by officers as they book suspects. The possible perpetrators place their digits on a scanner which then prints the image to an FBI scale card. The data is then digitised and sent to the central mainframe on which are stored millions of other prints. Not only can input be achieved directly, matching is also carried out via the computer.

Although no announcements have yet been made about a PC version of the system, peaceful police forces around the world are waiting with bated breath.

Forces in the UK may also be able to link Fingermatrix into the Police system to which the Government is considering paying a £5 million grant.

Police is an on-line system used in Hongkong at the moment. The additional funding, to which local MP and computer crusader Michael Colvin is giving his full backing, would save the work of 400 policemen a year. ■

BUSH PUSHES THE BUTTON

Just before US president George Bush was admitted to hospital for an irregular heart beat, he was learning how to turn a computer on.

Unlike his wife, and First Lady, Barbara, who carries a computer with her whenever she goes, George is still getting to grips with the basics of digital technology.



* Did the Super Mario Bros save the world from Dan Geyser?

The new Whitehouse IBM PS/2 is the presidential tutor, lesson one being how to switch the machine on. Next up is getting to grips with WindPerfect 5.

Bush's long term plan is to teach Whitehouse staff as computer literate as their predecessors were about tape recorders. So far it does not appear to be paying dividends. At a recent press conference, senior Whitehouse spokesman, Merlin Fitzwater, responded to a question about the Oval office PS/2 with a bemused: "What is a mouse?"

STOP PRESS:
As Express was going to print this week, we received a press



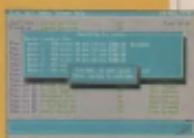
* George Bush – George Bay helped him get over his heart attack.

release from Nintendo casting in on George's recent spell in hospital. It stated: "Game Boy relieves presidential stress – fit, controlled." Nintendo's hugely popular handheld video game system was one way to help the President recover after his heart-attack while jogging at Camp David. ■

REVIEWS

The latest PC route planner to hit the streets

Autoroute Plus 4 explores some new territory – page 49



Electronic Organisers muscle in

Throw out your heavyweight Filofax and get yourself a lightweight digital organiser – page 52

Is this the World's friendliest frontend?



System 7 is finally here – page 56

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Games Week

Hot tips and news, plus Tetris, Predator 2 and Switchblade II reviews – page 50



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Your third chance to be a winner in our £5,000 Amiga software giveaway – page 58



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Arch-aeology

Adventure is a new software package for the Acorn Archimedes and A3000. The program gives its users the chance to explore an archaeological dig.

Revealed as a simulation, Adventure lets players the task of testdriving their way through a Roman villa in order to excavate some valuable 'finds'. The game doesn't end there, however.

Once an object has been found, it's off to digger HQ, a hut, to consult a computer. This machine will provide

data on the object, and even reconstruct it on screen. It can provide this service for all but three finds - it has no information on these objects. If you discover one of these, you are sent back in time to the Roman Empire to find out about the object by talking to the people who inhabited the villa. Once all three objects have been discovered, you are awarded a certificate.

Price is £25.19. For more information, contact Shertron Software on 0666 840433. ■

They're the tops!

The American based Software Publishers' Association has just published its list of top selling games for the PC.

With MS-DOS-based machines growing in stature as a gamers' tool in the United States and Europe over the last year, the following list caused much interest. The Top 10 is as follows:

- 1) Eye of the Beholder
Electronic Arts
- 2) Space Quest IV
Sierra On-Line

3) King's Quest
Sierra On-Line

4) Wing Commander
Origin

5) Death Knights of Krynn
Electronic Arts

6) Sim Earth Maxis

7) Sim City Maxis

8) Flight Simulator
Microsoft

9) Links Access

10) A-10 Tank Killer
Sierra On-Line

IBM stays in South Africa

64.5 million IBM shares worth of voting power went behind a motion for the company to cut links with South Africa at its latest AGM.

This figure only amounts to a meagre 16 per cent of the total voting potential and is the sixth vote in as many years voted in favour of taking Big Blue out of apartheid territory, where it carried out £41 billion of business last year.

Following the vote, IBM chairman, John Akers said: 'We are proud of how we are conducting our business in South Africa. Apartheid is abhorrent to us.' ■

Virtually real future combat

Cyber Fight is the previsonal title for a game that Electronic Arts reckons will be the first 'virtual reality combat game' for the PC.

Due in the autumn, Cyber Fight is a combat game in which contestants are pitted in cyberspace suits. Using cutting edge technology for rendered graphics, the gameplay also accounts for gravity, friction, inertia and elasticity.

It is expected to retail for £39.99. ■

£99 price set for official launch of Sega's hand-held

GAME GEAR HERE IN JUNE

The battle for hand-held games supremacy has finally been joined by Sega with its Game Gear machine.

Virgin Mastertronic, Sega's distributor in the UK and Europe has set a price of £99 for the Game Gear's June launch. Ideally it would have given it a price tag £20 lower, to compete with Atari's colour Lynx machine.

However, at the magical sub £100 price Sega is in direct competition with its arch rival, Nintendo, and its monochrome Game Boy.

The games to be bundled with the Game Gear will of course be licensed from Sega itself. They are as follows:

Columns, G-Loc, Wonderboy,

Super Monaco Grand Prix, Dragon's Crystal, Psycho World and the critically acclaimed Disney license, Mickey Mouse.

Whether or not Sega's great hope and precision Mario-buster, Sonic the Hedgehog will find herself on the hand-held before the end of the year is highly unlikely.

Prices for the games will be either £19.99 or £24.99. Sega further claims that there will be 25 games out by the heavy buying period leading up to Christmas. This is more than likely as the company can call on the massive back catalogue of cartridges already released for the MasterSystem and Mega Drive. ■



* The Game Gear - to be bundled with a host of Sega games.

Shoot-'em-up with a purpose

The Executioner is the first game from Hawk, a new label which promises 'arcade games with more depth'.

The game is a sci-fi shoot-'em-up with elements of trading information gathering. As well as piloting a shuttle craft over alien terrain and blowing up enemy ships you also have to capture prisoners and collect supplies so you can fly to the next planet.

'There's actually a purpose behind blowing away everything in sight,' said a spokesman for the company.

The Executioner will be available later this month at £25.99 for the Amiga ST and Amiga 3000.

Activision returns

Activision UK is dead. Long live Activision Europe.

Since the death of the UK branch, Activision's parent organization has settled its European

operation in Paris, and has just released six games for the ST, Amiga and PC.

B-Type II, the keenly awaited follow-up to one of the greatest blasters ever played is set for a July release on the 16-bit machines. It will retail for £25.99.

Hunter, a 3D vector graphics adventure-shoot-'em-up has already received attention in the media and was due to be released before the demise of Activision Europe. It and Destroids will now be available from August at £30.99 and £25.99 respectively.

Destroids, an arcade-style game which includes both vertical and horizontal scrolling, and end of level guardians, and one or two player modes. It will be in the shops from July at a price of £25.99 for ST and Amiga owners.

Shanghai II - Dragon's Fury, a puzzle game based around Maj-Jong which uses 12 different



* R-Type II: more mind boggling alien fire.



* Battleforce: colourful coverage in the space age.

levels taken from the Chinese calendar. Cost is £35.99 for the Amiga and PC and you can get your hands on it from September.

Blasteroids - The Crescent Hawk's Revenge, Activision joins forces with Infocom in this space-age, 256 colour 'epic' with 25 scenarios spread across five planets. Available from September for the PC at a price of £35.99. ■

Fees rise to £75 – 'almost Latin American proportions', says MP

DATA REGISTRATION PRICE RISE SLAMMED

Labour MPs have attacked the rise in the charge for registration under the Data Protection Act as unfair and counterproductive.

The fee is due to rise by £19, from £55 to £74, on 1 June. Harry Cohen, Labour MP for Leyton in East London, claims that the fee will discourage registration since it has to be paid by any individual or company which stores personal information on a computer database. He also maintains that it is biased against small businesses and noncommercial organisations.

"It is in the public duty to register, so the fee should be kept at a minimum to encourage registration," he told *Express*. Cohen also raised the subject in the Commons earlier this month.

The registration fees are used to pay for the running costs of the office of Data Protection Registrar (DPR). The Registrar's office ensures that the provisions of the Data Protection Act are adhered to. Under the Act, individuals have the right to access any information about

them which is held on an electronic database. The office is also responsible for investigating complaints relating to the act.

Like many other Labour MPs, Cohen believes it is wrong that you should have to pay to register and that it creates a situation which will lead to rapidly increasing fees. When the fee was introduced five years ago it was just £22. The forthcoming rise to £75 represents an increase of almost 350 per cent. "It is almost Latin American in proportion," said Cohen.

PROSECUTION

The Registrar's office does not feel, however, that the new fee will deter large numbers of people from registering. "We have been prosecuting – people increasingly and more regularly, but the rise doesn't have much to do with it," says marketing manager Diane Brown-Milner. "We're excited for a number of years now and the honeymoon period is over. People should be fully aware of the Data Protection Act by now."

She also points out that the fee covers a three year registration period. "That's just £25 a year, less than you would pay for a magazine subscription."

BIASED UNIFORM FEE

Cohen also feels that a uniform fee is biased towards large organisations, such as TEL, for which £75 is virtually insignificant. However, £75 for a small business or social club in a much larger chain of their spending, also, every school which holds a database will have to pay, and the accumulation of schools across the country will add thousands of pounds on to the education budget.

Registrar Eric Howe is sympathetic, but points out that this method of funding his office is actually laid out in the 1984 Data Protection Act. "Changing the way we are funded is a matter for ministers," he says.

Howe actually proposed a simplification of the payments system in 1989 which would have meant that only larger companies and organisations which

mittees at the moment and will not be finalised until January 1990. Its outcome will probably have effects on the Data Protection office, and Howe believes this will prevent any immediate changes taking place.

Opposition attempted to contact MPs on both the Government and Liberal party benches this week to ascertain the level of support, or otherwise, which Mr Cohen is likely to receive.

At the time of going to press we have received no responses to our persistent telephone calls to the offices of Michael Cohen MP or the Right Honourable Paddy Ashdown – both who are known to take a keen interest in computerised matters. We did, however, receive an official statement from the Home Office which merely states that the increased fee was necessary to meet the Registrar's costs.

Meanwhile, Cohen is set to bring up the subject in Parliament again when the new European Directive on Data Protection is debated in the Commons next month.



Eric Howe, Organiser of the All Fairs Fairs.

Fun at the fairs

The dates and venues of the next three All Fairs Fairs have been announced. The fairs, which have proved to be popular with both 8 and 16-bit enthusiasts, as well as the occasional PC, and curiosity drives Mac users, will go ahead in the following places:

11 May – New Horticultural Hall, Greycoat and Elerton St, Nottingham, London.
9 June – National Motorcycle Museum, Coventry Rd, Solihull, Birmingham.
22 June – New Horticultural Hall. The organisers claim there will be thousands of bargains and savings for all computer users. ■

Businesses should compete for IT students, says report

Computer firms should be able to award degrees and compete for students the same as universities, according to a report from the Institute for Economic Affairs.

Written by Sir Douglas Hague, an academic at the Manchester Business School, Beyond Universities claims that students training for jobs in the "knowledge business" gain better experience from learning in a live, competitive situation. It suggests that many colleges and

universities are bogged down in academic tradition and do not reflect the new high-tech age.

"The best preparation for becoming a scholar is now not necessarily a post in a university," says Hague.

He also says that many firms offer training schemes more innovative and relevant to the IT industry than universities, and that unless educational establishments move out of their "academic blinkers" they will become obsolete. ■

Graphs the easy way

Even the most artistically inept PC user will be able to produce professional looking charts, diagrams and documents – thanks to Graph-in-a-Box.

Publisher Affiliated Software reckons the package is the easiest to use business graphics software in the world. It has data capture functions which allow statistics to be taken from other

files and transformed into presentation graphics.

There are 15 chart types and nine fonts which can be printed out or exported to other Desktop Publishing and word processing packages. Graph-in-a-Box costs £250 for the single user version and £950 for the network version for up to five users.

Contact Affiliated Software on 0273 606125. ■



* The Data Protection Act: claimed in its entirety to schools and small businesses.

dealt with "sensitive" information will have to pay. Similarly, a Home Office report last year concluded that an alternative method of funding the office should be found. So far the politicians concerned with changing the law have ignored both.

EUROPEAN DIRECTIVE

Howe cannot see the situation changing until at least 1994. This is because of the European Directive on Data Protection which is currently passing through various Committees com-



+ Money for old chips. Could you cash in on HP?

PC trade in on HP

Hewlett-Packard is offering trade-in deals on old PCs. The company will give up to £300 to purchasers of its Vectra series computers in exchange for older PCs.

The offer will run until the 21 July and covers the following machines: the Vectra 2000 (1840/150), 1620 (1637/17), and the 184 (1415). In the case of the 186/25 you will receive the full £300 so long as whether you hand in a PC100 or a Compaq 386.

The Vectra, however, does not extend to the new Vectra 486SX which Hewlett-Packard believe to be much ■

LANs slide

Nearly three working months a year are lost due to failures in Local Area Networks (LANs) according to a report published this month.

Consultancy firm, The Networking Centre, surveyed 50 companies throughout the UK. It discovered that the average LAN crashes 20 times a year with over four hours of downtime caused each time.

Even the company itself was stunned by the results. It did however, refer to an American survey carried out by Infotek, which had produced very similar conclusions. Following criticisms of the survey, The Networking Centre's senior consultant, Clive Seraga said: "I find the figures hard to believe myself". ■

Sound buy for the Amiga



• The AD2105 from Sunfire. It offers 12-bit sampling and SMPTE time codes.

An upgrade of the acclaimed Amiga1000 16 sample editor is among the new range of powerful audio peripherals for the Amiga from Burins.

Amigas 4 is an advanced 8-bit sample editor which adds to the features already available on Amiga1000 II.

Now you can record direct to floppy disk, save executable sounds and use real time filters. The program is also more compact than its predecessor, taking up half the amount of memory space, but also quicker.

Also in the range is Studio 16 which turns an Amiga 2000 or 3000 into a professional digital audio workstation capable of recording hours of music to hard disk synchronised with a time code.

The final package is Perfect Sound 3, an 8-bit stereo sampler which connects the Amiga to a CD player, radio or microphone via the computer's printer port. Bundled software allows you to record and edit any sound and you can control the left and right channels individually.

All these products will be available in the UK through HB Marketing from next week. Pricing has yet to be announced, but they are currently retailing in the US for around \$100 each.

Hardware add-ons are also on the horizon with the AD2105 12-bit sampler card which makes use of Studio 16 software.

The AD2105 completes the range. A 16-bit card it offers MIDI in/out and SMPTE compatibility.

For more information call HB Marketing on 0753 6862000. ■

Holograms and rainbows combine to create new chip

LIGHT FANTASTIC!

Scientists working at IBM in the United States have discovered a polymer with potentially the same qualities as fibre optic systems.

The four scientists, W E Mamer, Stephen Ducharme, J Campbell and Robert J Twieg, have been working on the project at IBM's Almaden research and development centre in San Jose.

The polymer's constituents factors are derived from materials found in the photo-reactive cells of photocards and laser printers. However, a new, and as yet unnamed, epoxy also enters the equation. The combination of these ingredients produces the revolutionary polymer which possesses the highly sought after photo-refractive (PR) qualities only previously found in crystal-based systems.

The polymer's qualities allow it to act as a 'ref' which captures the electronic patterns formed as laser beams cross within it.

The information which is caught in this ref behaves in a similar way to a hologram. The potential for data storage goes far beyond this simple analogy however. The IBM team explained to the Materials Research Society meeting in April that up to 100 holograms, each of which can contain one million bits of data, could be stored on one micrometre area of the polymer. Their estimate was that this slice would measure only 2mm in diameter.



• The PS/2 486: IBM is now developing technology which will make the 486 look pedestrian

While the commercial applications of this new technology are still five to ten years away, it is thought that IBM are already making feasibility studies into possible large scale production.

The long term effects of this potentially low-cost, high powered storage and data transmission media can only be imagined. IBM's discovery comes at the same time as developers at Texas Instruments demonstrated a chip which uses light instead of conventional electrons to hold and transmit data. This discovery came out of an attempt to combine two previously incompatible systems - silicon and gallium arsenide (GSA).

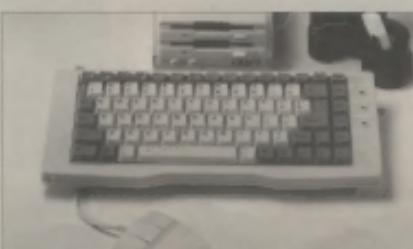
The new chips are called Optoelectric Integrated Circuits (OEICs). Each one makes use of eight GSA infra-red light emi-

ting diodes (LEDs) contained with CMOS-based silicon circuitry. The ability to use light for the transference of data has allowed the developers to bridge the previously unbridgeable gap between GSA and silicon, and to actually speed up the rate of data interchange.

The basic process which led to this discovery was invented in the laboratories of Texas Instruments as far back as 1988. It was then called 'co-integration'. The company hopes that this advance in chip design will enter the commercial sphere within the next two years.

The combination of IBM's new polymer, and Texas Instruments' gallium arsenide/silicon light bridge could well bring inestimable benefits to users in years to come. ■

Smallest PC Ever



• The Tiny PC: Is it a portable or a desktop?

A new computer company has launched itself into the marketplace with what it claims to be the world's smallest desktop computer.

The Tiny, from Tiny Computers Limited, has a footprint about the size of an A5 piece of paper. It has an 83-key keyboard and the graphics are CGA and Hercules compatible. It comes with a TV PAL modulator so that it can be linked to a television as well as a standard monitor. It is available in a variety of configurations from the £695 TCI with a single floppy drive for £299 to the £299 TCS with a 40MB hard disk and floppy drive for £299.

Tiny Computers Limited can be reached on 0737 795511. ■

Secure-IT

Businesses can now have their computer systems checked by government approved experts, for a fee.

The consultants are known as Commercial Licences Evaluation Facilities (CLEFs). And have been appointed by the Department of Trade and Industry (DTI) together with the Communications Electronics Security Group (CESG). Companies will have to supply the CLEFs with details of installed computer security systems so that future threats, and the correct defence against them, can be properly evaluated.

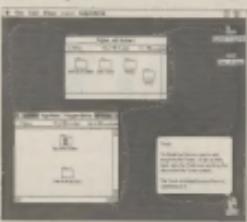
The DTI hopes that the CLEFs will eventually be able to build up a catalogue of certified security products. The project has taken two years to develop and brings the UK in line with other European countries.

At the time of going to press the DTI had not confirmed price, nor even a pricing scale for the CLEF service.

For more information call the UK IT Security and Evaluation and Certification Scheme on 0443 821877. ■

Apple's latest operating system is widely acclaimed

SYSTEM 7 LAUNCHED



The Macintosh's new operating system and front end, System 7, is now available from Apple Centres at price of £495.

May 13 saw the simultaneous worldwide launch of the eagerly awaited O/S, which has been in development for over two years. System 7's eventual public release follows numerous delays which Apple has blamed on 'technical difficulties'.

System 7 was designed by Apple's software engineers at its Cupertino, California HQ.

The basic WIMP (Windows, Icons Mouse and Pointer) interface which is the hallmark of the Macintosh has been retained, with a 3D look added for users of colour machines.

The upgrades to the operating system extend far beyond cosmetics however. Refinements have been made to networking, font/typeface installation, application launching. Context sensitive help has also been added. These changes extend to all Mac computers from the top of the range iMacs down to the entry level Mac Classic.

One area which is expected to be heavily influenced by System 7 is that of Windows. 3.

According to Arlene Cox of Microsoft who spoke to Express this week, 'I must make it clear that with Windows and the Mac operating system, we do not compete against Apple. In fact the release of System 7 gives

Apple a great opportunity to compete with us', in terms of future improvements to Windows. Ms Cox has this to say: 'The way in which System 7 totally hides the operating system from the user is obviously impressive. I would like to see Windows picking up on some of the graphics improvements to System 7. Generally, though, I think this is going to be a good year for Microsoft in the Mac world. We have nine planned before Christmas. And yes, all of our product upgrades for the Mac will be compatible with System 7 devices such as Publish and Subscribe.'

Apple has in fact stipulated that any new software developed

for the Macintosh range will have to contain System 7 compatible devices. The two major exceptions of such System 7-friendly options are the context sensitive Balloon Help system, and the innovative Card/Partie upgrade Publish and Subscribe.

In terms of future developments, it is expected that minor upgrades to System 7 will be forthcoming before the end of the year. These will appear as System 7.01, 02, and so on, up until the release of 7.1 - the first major enhancement sometime in 1992. Apple has not stopped there however, statements made by the development team make it clear that System 8 is even now in the planning stages. ■

System 7: the upgrades and innovations detailed

System 7 comes with no obvious changes to its predecessor. While you can read the full, world exclusive review in this week's Express, here are the details:

- Macs with memory management chips can now make use of virtual memory. Essentially this means that a Mac with an 80Mb hard drive can convert that ROM into useable RAM. This does not apply to the Mac Classic, SE, and Plus.

- Publish and Subscribe takes over from Card/Partie on the desktop. This is a 'live' system which can be shared by applications, and automatically updates data. All Macs.

- Balloon Help. This interactive system is content sensitive. Apple has stipulated that all new software developed for Macintosh computers must be able to use Balloon Help. All Macs.

- Process Manager is the replacement for the previously optional Multi-Finder background application. It allows pseudo-multitasking to be carried out. All Macs.

- Built-in networking. Previously users would have to buy additional software to make use of the Macintosh's LocalTalk system. System 7 does not need additional software. All Macs.

- Apple Menu'. At the top left hand side of the Mac screen is an Apple symbol which acts as the icon for the Apple menu. System 7's Apple menu could only launch disk accessories such as the calculator. System 7 allows launching of any application. All Macs.

- File organisation. The files within desktop folders can be viewed by clicking on a button

rather than opening the folder itself. All Macs.

- Cosmetic changes. A 3D look has been given to the desktop. Not more Macs such as the Classic, SE and Plus.

- Font installation: previously, leading new typefaces for use in Macintosh-based applications such as Quark Express and Aldus' PageMaker, entailed installing them using Font/DA Mover. System 7 sets in an intelligent manner, automatically installing the fonts.

**For the world exclusive
review of System 7
turn to page 56.**

Massive Mac screen makes its debut

The new version of Radius' Advanced Full Page Display (A-FPD) monitor has hit the market thanks to the success of the new Mac Classic and LC.

The monochrome Radius FPD can be picked up for use in both landscape and portrait modes. It provides 75 dots per inch (dpi) resolution compared to the 72 dpi available as standard on the Mac Classic.

A whole A4 page can be displayed in its entirety without the need for scrolling, with text large enough to read easily. The new model is specially designed to fit the needs of Classic LC and

Si users, but will also support the rest of the Macintosh range.

Featuring a monochrome screen and an optional off and on/off base, the FPD comes with RadiusWare, display utility software.

The original FPD was released in 1986 to accompany the MacPlus and SE, but was withdrawn as these products declined. The FPD for the Classic retails at £995 while the LC version costs £595.

Models for the machines in the Macintosh range - the Si, SE, LC, and IIx - cost up to £1208. Radius can be contacted on 0833 200 8292. ■



* The A-FPD monitor, an A4 page can be shown now as it is shown on the Classic.

System 7 to Excel

The first batch of System 7-friendly software has also been announced with Microsoft leading the way.

Its 'Excel spreadsheet' has been upgraded to version 7, and according to Microsoft, to fully implement the new Excel, users will 'require System 7'.

A major change is that 2Mb is opposed to 1Mb of RAM is now required to run Excel.

Price is £345, although a free upgrade is available to users who bought the spreadsheet after January this year. For more information contact Microsoft on 0171 5007411. ■

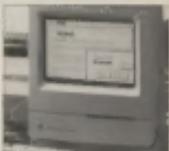
Full motion Macintoshes

A new CD-ROM based encyclopedia has been launched for the Mac. *The Dictionary of the Living World* is claimed to be the first CD to arrive in the UK, which sees full motion video, 25 video clips are included on the CD. Users can also edit and add entries.

For those many Mac users without access to a CD-ROM drive, there is *The Dictionary of the Living World*, an floppy disk. It contains the full text of the CD-ROM version, as well as 1,000 black and white photographs. Price has not been set on this product as yet.

Price for *The Dictionary of the Living World* is £205.82. The UK distributor for this product range is Kinetics (0392 888873). ■

Classic costs



After claiming that sales of the Mac Classic have sky rocketed in the past three months, Apple is now predicting a drop in profits.

In fact, sales of the Classic and the other low-cost Macs appear to have a great deal to do with the fall in profits.

Apple is blaming the losses on the fact that a larger percentage of its sales have been taken up by low-end machines, rather than the pricier LCs and IIxs.

The weakness of the dollar in Europe is also quoted as a factor in the financial crisis.

However, Apple is quick to point out that actual volume of sales of its machines are still very healthy.

It quotes an 85 per cent increase in sales in the first and second quarters of 1991 compared to the same period last year.

'The lower priced products succeeded more than we imagined and the product mix is moving towards the low end and the profit margins there are steeper,' explained Christopher Eshier of Apple public relations.

Apple's bad news follows on from IBM's statement, made last week, that it lost money for the first time in its history.

This was also partially blamed in the fall off in sales of its higher products such as mainframes, and a bad dollar exchange. ■

NIBBLES

School wins CDTV
A comprehensive school in County Antrim has won a CDTV at the first prize in Commodore's Business Education Challenge. Members of the winning team from Lismore Comprehensive had to prepare and present a marketing plan for their school. The school is the first to receive a CDTV, which was officially launched last month.

HP-in court

The Adesman Corporation has filed an antitrust suit against the Open Software Corp. and its sponsor, including Hewlett-Packard. The company is accusing them of acting as an illegal cartel conspiring to fix software technology and set price ceilings in other markets.

Portable Olivetti
Olivetti will be setting up 20 'Portable Centres' to market its new range of portable and notebook computers launched this month. The centres will be staffed by Olivetti trained sales assistants. Prices for the new portables range from £1,119 to £3,199.

The big screen

Mitsubishi has launched a very high definition, 35 inch monitor. Designed for presentation use, it reduces distortion caused by the curve at the edges of the screen by automatically correcting pixel shapes at these areas. Compatible with most PC, PS/2, Macintosh II and Ibm-based workstation high-resolution graphics cards, the monitor will cost about £2,000 when released in July.

Grey Gold imports
Grey imports of Golden Image software have entered the UK, following supply problems the company had earlier this year. Golden Image is refusing to provide any form of help, advice or warranty to anyone who buys these illegal copies. Many of the grey imports are not the UK versions of the software.

LaserFax

Hewlett-Packard has launched the LaserJet Fax Accessory, a stand alone device which allows faxes to be printed out on any laser printer. If this sits between the PC and the printer, and if the printer is not on it stores up incoming pages in a buffer that can hold up to 12 pages. A 1Mb memory upgrade allows storage of up to 90 pages. It retails for \$1,895 in the US. ■

CDTV's launch is quickly followed by add-ons galore

CDTV: THE EXTRAS

Some three weeks after the launch of the £599 Commodore Dynamic Total Vision (CDTV), more details are emerging of the optional extras being made available for the system.

In line with Commodore's marketing policy, which is designed to appeal to general highstreet consumers rather than computing enthusiasts, the add-ons will be known as 'accessories'. Head of Holiday, Commodore UK's marketing assistant, said: 'Express'. 'We're calling the add-ons accessories. They are peripherals, but they're known as accessories because CDTV isn't a computer.' To further consolidate the product's positioning as a household device, Commodore is also reputed to be spending £6 million on a press and TV advertising campaign.

Jonathan Anderson, Commodore's retail marketing manager, confirmed that a range of accessories will be available

by September.

First up will be an infrared mouse, codenamed the hamster, because it hasn't got a tail, closely followed by an infrared trackball, with connections for joysticks, and an infrared keyboard. Prices are as yet unconfirmed. By the end of the year, the company hopes optional floppy drives and printers will be available, although as yet, the CDTV specification doesn't allow for hard disk connection. But as Anderson added, 'You will be able to do all the things you can do on your Amiga 500 as long as you add a floppy drive and keyboard'.

He also intimated that connectivity software for networking groups of CDTVs, together with use in schools is in the pipeline. A better joystick will also be offered, as an authorised firm, along with a personal memory card drive. This will allow users to load and download data from credit-card sized

wafers each capable of storing up to 512K of code. These memory cards will comprise both ROM and RAM versions, thus opening the possibility of releases of applications in card format. 64K, 256K and 512K versions will be offered which will enable users to save preferences, game positions and scores. Using the cards, the operator will also be able to switch off CDTV and resume an application at the point left simply by switching on and re-entering the card.



CDTV: Q. when is an add-on not an add-on? A. When it's an accessory.

The £5 million advertising campaign, scheduled to begin in the run up to Christmas will be accompanied by the catchphrase, 'That's one way of looking at it'.

The campaign will take the form of five adverts, 'Mimic' and 'Picture', which will stress the machine's high quality graphics possibilities. A further £800,000 will be spent on advertising in colour supplements and specialist press. Details of the firm's TV advertising plans have yet to be decided. ■

US chip chat offends Japan

A statement made by the chairman of the US Senate finance committee, Lloyd Bentsen, has produced a storm of protest in Japan.

On a visit to Semtech, the US government funded semiconductor project, Bentsen claimed that seven Japanese firms were keeping advanced semiconductor information from US companies.

He then went on to say that American chip manufacturers, such as those involved in the Semtech project, were not receiving valuable data relating to processing semiconductor wafers, due to a Japanese strategy of world domination.

Bentsen continued by accusing the seven Japanese companies of inflating prices charged to American companies, by up to 30 per cent compared to those charged in Japan.

Reaction from Japan has been swift and distinctly angered. The Electronic Industries Association of Japan (EIAJ) called Bentsen's claims 'ridiculous'.

Hitachi, one of the firms named by Senator Bentsen, stated: 'If we did receive an order, we would provide the equipment'. It backed up this statement by saying that no such order had ever been received. ■

Amiga animates Edinburgh 1991

This year's Amiga Animation exhibition and competition is to be hosted by the Amiga Centre Scotland from August 11 to 31.

The 1991 event is fourth of its kind to be run. Last year's final exhibition of the winning entries featured 11 different categories, and 28 pieces of work. The eventual champion animator was Eugene Messina with his Main Rider.

White Messina's work was widely acclaimed as being of excellent quality, and the obvious winner, the general standard of entries was poor, with amateurish attempts mixing in with corporate videos. Amiga Centre Scotland is looking forward to a heavier selection this time around.

If you would like to take part in what has become an international event, it coincides with the Edinburgh Festival, then your entries should be received by July 31. Send them to the Amiga Centre, 4 Hart Street, Edinburgh, EH1 3BN. Telephone 031 557 4842, or fax 031 567 3560. ■



* A screen from Main Video, 1990's animated Amiga marketplace

Intel's next generation



* Faster, bigger and cheaper, Intel's 486 upgrades are announced.

A 65MHz version of Intel's 486DX chip, nicknamed Igor, is rumoured to be near its release date. And it's the lastest yet. The 486SX chip which was the star of last month's Which Computer Show, and which is already being used as the heart of PCs from IBM, AST and Hewlett-Packard, runs at 20MHz. The new version bears its predecessor's name in speed and the number of instructions it can carry out - 55 million per second (MIPS), compared to 15.

A 50MHz version of the chip has been demonstrated to the press, and is scheduled for release in late this year. Intel had also showed basic plans for a massive 100MHz version of the chip.

This will be the first true testbed for Intel's eagerly awaited, and inevitable, 586 processor which is widely believed to be timetable for a 1993 launch. ■

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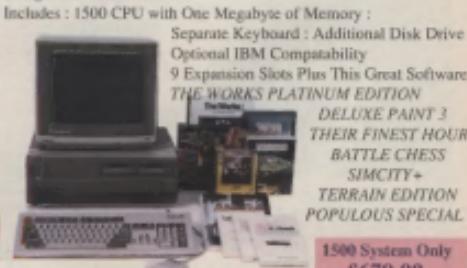
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A page of news aimed specifically at people who don't wish to waste time searching for new product releases and updates. From now on this page will reflect all of the most up-to-date hardware and software launches, from 486SX PCs to modems, from keyboards to CD-ROM drives, in an up-to-date style. Each piece of information has been carefully examined for both relevance and information value. We will give you the low down on price, technical specifications, and availability, as the news comes in. Expect the unexpected, Johnson's standards will appear here first. Please note that, to the best of our knowledge, all prices quoted are inclusive of VAT.

A chip off the new block

PRODUCT: RISC chip
NAME: AM29030 and AM29035



A strange choice for the news page you might think, but we know that many of our readers are interested in the very heart of their machines, and also in what could be the next big thing. These new Reduced Instruction Set Computer (RISC) chips offer the developer, and keen enthusiast if necessary, the chance to design state-of-the-art machines.

Even now Apple, NeXT and Acorn are working to make machines based on RISC architecture a standard worldwide.

Not only do the chips offer all the benefits of reduced instruction technology, they also come with a 4 to 8K on-board cache for instructions. Again, in the words of our resident technical expert: 'This gives the cache some kicking space'.

Price: 16MHz = £52, 25MHz = £84, 33MHz = £105
Availability: The chips will begin shipping in bulk from September.

Target user: Developers and hardware manufacturers - with specific attention being given to imaging controller devices (such as those used in the NeXT mice/mouseball) and bitstream manipulators
Contact: 0483 755500
Perceived competition: None

A star is born

PRODUCT: Printer
NAME: Spectrastar

This colour film and wax transfer printer makes use of clay paper to produce high quality full colour pages. It makes use of



* The new 4Mb Mitsubishi floppy drive for the IBM PS2 - the first of its kind.

Drive with attitude

PRODUCT: 3.5-inch disk drive (internal)
NAME: Mitsubishi MF254C

Compatible with IBM's PS2 PC, this drive is a high density, 4Mb version. In effect this provides 2.8Mb formatted. The ferroic magnetic disk heads used in the drive are claimed by the company to offer a maximum data transfer speed of one Megabit per second, from the 80 cylinders and 160 tracks which are provided for storage. It measures 106mm (width) x 25.4mm (height) x 145mm (depth), and is downwardly compatible with standard 1 and 2Mb drives in both read and write modes.

A spokesman for Mitsubishi's public relations company in the UK, told Express that this drive was a 'new industry standard'.

Price: £90
Availability: Now
Target users: Original Equipment Manufacturers (OEMs), Value Added Retailers (VARs), End users (by the end of August).
Contact: 0303-298100
Perceived competition: Both Sony and Citizen are working on similar products.

a RISC processor, and has full Postscript compatibility.

The three colour ribbon which you will require for the best output results costs £120, and will provide up to 340 pages. Add-ons planned for the printer include a 60Mb RAM upgrade which will take the machine to a substantial 32Mb.

An internal hard drive, and 35mm camera attachment are also promised in the near future.

Price: £6,900
Availability: General Parameters and other repeatable printer dealers
Target users: Desktop publishing, presentations, High quality prints
Contact: 081-697 3546
Perceived competition: The nearest rival is Techronics. Although, according to the manufacturers of the Spectrastar, the competition does not match up in terms of speed and data formats.

Space Age

PRODUCT: Local Area Network (LAN) router
NAME: Space Station

While this product is pitched as a VME slave terminal for a LAN system, according to Express' technical editor Keith Penfold, it has everything needed to make it a standalone 280/386SX PC. It looks exactly like a standard PC 102 keyboard with its system box. What makes it unusual is the fact that the disk drive and expansion ports are mounted

quarter-sized 38-bit board and all the necessary software required to process the photographs using your PC. To use the card, you will require a 286 PC or upwards, with 640KB RAM, running DOS 3 or above. The kit allows you to take high quality photographs, crop them almost instantly, and convert the images into standard graphics formats such as TIFF and PBM. Once stored on a floppy or hard disk, the graphics can then be imported into desktop publishing applications.

Peripherals planned for this product include a set of bite-converter lenses, a film adaptor, and major software releases which we believe will include compatible products from Alias and Precision Software.

According to a spokesman for Canon, the PC kit will offer a new way into the graphics workspace because 'Everyone can get hot into documents. Now everyone can do the same, as easily, with pictures'.

Price: £1,169
Availability: Estimated at the beginning of June, from Canon directly or from specialised PC retailers.
Target users: Desktop publishing, image processing. In the long term, graphics libraries will place PC compatible images in the realms of the public.
Contact: 081-723 3173
Perceived competition: There is none, to the best of our knowledge.

The bigger they come

PRODUCT: 15-55 kHz data projector
NAME: NEC GP3000



A massive projector for use in meeting rooms, the GP3000 provides a clear RGB image of 300" high by 62" wide. It offers both VGA and VGA compatibility, with interfacing achieved via S-video, BNC, D-type inputs. Both SVHS and PAL standards are catered for, which means that the user is not limited to using the device with a computer. Ideally, a multimedia interface could be achieved with this technology.

Price: £10,875
Availability: Now
Target users: Seminar and exhibition managers.
Contact: Aava Valley Displays: 0846 350681
Perceived competition: Barco is also producing projectors on this scale. However, according to Aava Valley: 'Barco isn't a complete solution'.

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Write and tell Haydn Fitz-Williams what you think! Reach him at: Express Mail, 30 Monmouth Street, Bath BA1 2BW. Sorry, no personal replies, even with an SAE and remember only **SOME** letters win a free!

Errr..sorry?

I JUST thought I'd write and tell you how much I've enjoyed the C86 column over the past few weeks - it really has been splendid! Please give my thanks to the person responsible for such an informative, interesting and entertaining column.

Eve...Athena Roberts, Merseyside

THANKS ERRR... Doubtless we'll be receiving similar communiqués from Jason Hobson, Ian Wrigley, Andy Hutchinson, Red Lawton, Robin Alway, Ken Courtenay and, of course, Paul Rigby since the PC column makes its long-awaited reappearance.

Post-piracy

I KNOW that £29.99 is a lot to throw in a new game, especially if you still don't certain of the quality of what you're getting. But is pirating the stuff REALLY worthwhile? Presumably you people have acquired a fair amount of programming experience, plus a bit of business acumen through sensibly fogging the fruit of your labours.

Are you really utilising these skills to your advantage? I suspect not. Sure, it's fun, but is it a profitable exercise? Maybe now, but will it be any good when you get out into the big, bad and prohibitively expensive Real World, with all its hassles and obligations?

I used to crack software myself, back in the days when all the games were on tape and I wanted to get them onto disk. I learned a lot about assembly language and how my machine worked from looking inside other people's code. But now, through

doing a Regne course in Computer Science, I've graduated (sorry 'bout that pun) to bigger and better things. I've learnt about REAL programming, and about REAL computers, and with luck I'll get me a degree and go find me a REAL job. Believe me, some of you may think that breaking through a sophisticated game protection system on your home computer is a major achievement, but compared to designing, implementing, testing, and maintaining a BIG application running on a BIG machine, and doing so as part of a team, it's pretty minuscule.

I suggest you invest your effort into putting your skills to a more profitable use. Piracy doesn't help anyone in the long run, especially the auteur plate.

Alec Rajen, Webster, Herts

COULDNT AGREE more myself. But while one day the pirates may grow up

and get to grips with the real world, there'll be others waiting to replace them. I'm increasingly beginning to think that the only way to stop piracy is to stop releasing games on floppy disks. Mathematics that economics will dictate CD format only games releases within five years - you can't stop the prying fingers, lock the lid! But the next letter would seem to suggest another problem.

The real world

WHERE DOES the majority of pre-release software come from?

A lot of games come from developers. Rainbow Islands was given to us a whole year before its release, but most came from any of three places:

1) Duplicators - duplicating can take weeks. We have contacts working in such places who give us a copy as soon as they come in. This gives us the game up to 3 months before release.

2) Distributors - as above, but the people we work with in these places get us anything up to two weeks before release.

3) Shops - Slightly slower here with a few exceptions explained below. Different countries have different release schedules. We get games from shops in America, Australia, France, Italy - all over the world. France is a good place for shop releases, especially Paris.

For an industry which runs solely on the exploitation of

gullible young programmers' intent, the only people truly left by piracy are the grey-suited money men who run these companies.

Good games always sell and make programmers money only if they are on a royalty deal but 80 per cent of titles are purely and simply bad conversations from arcade machines, where the sound and graphics are just copies and pasted and then glued together with quick coding. The only cost for this sort of production is the license fee and the serial lead to port the code from the ST to the Amiga.

I hope this isn't too bleak for you 'cos this is the way it is and the way it will stay. No protection can't be cracked.

One of Many, Leicester

WELL IT seems I'm wrong already about uncopiable CD being the solution. If two of the main sources of pirated games are developers and duplicators, which I can well believe they are, it would appear any master code will be distributed irrespective of its final format. Also it looks like we're dealing much more with organised crime here than just some shadowy crooking and swapping.

Reading between the lines, I reckon there's under the counter payment changing hands - programmers taking the cash directly from pirates and cutting out their publishers who will have already paid them an advance and some form of monthly salary. Not a lot more one can say really is there?

- HOW TO GET RICH BEYOND YOUR WILDEST DREAMS... -



• This evertyped little yellow jet could make you a million pounds very easily. All you need is one Woolworth's shop, £1,999.00 in spare cash and a helluva lot of sticky tape.

I actually developed one of these 'get rich quick with your computer knowledge' that really does work!

All you have to do is to go down to your local Woolies and buy the Bert Flag single for £1.99. You then stick the cover over your monitor with sellotape and play the record, thus saving yourself at least £1.01 on buying the three-disc public-domain sampled version.

If you do this 1,000 times you will make the amazing sum of £1,000,000 - enough to put every other scum to shame and make you very rich indeed.

Van Bigrum, Bristol

2) Here's a great idea for having all the time you spend in front of a monitor into a profitable way of becoming an overnight multi-millionaire. All you do is eat your dishes with sootin so they'll spontaneously combust when in contact with the dinner's read-with heads and destroy the contents of your house. Then you sue the dish manufacturers pleading loss of property, health and sanity. Simple eh?

John Symes, Victoria Hospital Drive, Unit 10, Worksop, Notts

ERRR...YES. Do any other readers have simple, yet wonderful last ditch ideas to offer?

A Poser

SOMETHING to Investigate 1
11 INCE 130, 2 May 1991, page 55, column 2, paragraph 2.

"Then we chanced on a stroke of luck. The Saab driven by John Gold turned out to be registered to an Elizabeth Grant-Muller, resident in Queens Road."

2) Computer Weekly, 2 May 1991, page E.

"Police 'guilty of systemic abuse'. Police officers are still issuing the Police National Computer... holds confidential information... registration data on every motorist." *Discuss.*

Gavin Syrie, Edinburgh, Scotland

Oh no!

"NEW COMPUTER EXPRESS STAFF IN SHOCK POLICE DISBURY CASE"

Read all about it in this week's Sunday Sport

Steve Brown, Kirkcaldy, Fife

A GOOD point on which to start a debate, but Express doesn't use 'inside sources' to ascertain the registration information in question: The real data is public domain and can be gleaned quite legitimately — with a little ingenuity. I don't want to print the details though — we'd start getting complaints from private detective agencies left, right and centre.

Big piles

I WOULD first like to say that NVE is very good value for money and is very informative. I don't know if other readers experience this, but I find it difficult to throw the mag away when I have read it, so I have a pile about two feet high!

James Smith, Stockport, Cheshire

WELL... just how big are other readers' piles? Send in photographs and we'll print the largest! (Are you sure? — Ed)

Shuttle shock

IN ISSUE 130 I was outraged by an

On-line mail

Gymnastover? The magazine is full of Express' half-baked contributions (in CXN) that are little more than padded writing (plus a few lines and half a dozen photos) — and that's not to mention the 'Your comments' feature! (Even the cover of Prestige and Motoring — get it? — is nothing but a load of clichés!)

article for Kiggin's shuttle simulator or rather the photo and the caption for it. It's disgusting that year magazine should treat such a disaster as lightly after taking such a moral stance on plotting software to totally rule what little I can see we're heading for one of the longest sentences ever to grace these pages here. (H-F-W) credibility you had by making fun of the shuttle disaster, if, for one, am absolutely disgusted with NVE

Jan Hurst, Wigton, Lancs

OK, OK. I agree the caption was in bad taste. I suppose I also went over the top last week by pointing off those crap jokes about the shuttle disaster. But then some people find black humour funny. Mind you, others would say it's merely the pitiful response of a sensitive mind to horrors too massive for it to fully comprehend. Take for example... err... no you better not.

Sam update

I'VE HAD a talk on the phone to Alan Miles about what you said last issue. He says that not only is what you said completely rubbish — you've had a SAM for ages — but also when SAM computers were canvassing you a couple of weeks ago [not proving that the BBC problems were non-existent by demonstrating their sequencing software] and were asking you to write a column on the SAM in preference to then continuing with the BBC, Miles actually asked you if they could name a reviewer — and you were (no — this is definitely the longest sentence ever to grace these pages — H-F-W) saying that they were forcing you to use their people to review the Coopé in the first place!

Simon Cooke, Sale, Cheshire

BIGOE. Firstly, we were given a SAM for review ages after the original launch and when it arrived it didn't work. Secondly, Alan Miles is the one who's talking rubbish. Thirdly, the editor asked Alan to suggest a columnist from the various user groups and fanzine circles he knew of and, fourthly, Express decided not to run a column because it wouldn't generate enough interest. Think about it — I just can't see why they should want to pass over a helion which they claim brings in 1,000 calls each week at a rate of 33p and 44p a minute. Can you?

PC Plodding

FURTHER to your request for multiple sightings of PC's on television, I feel sure I must win readers' gold as I have spotted literally hundreds of PCs during

the course of the last month. The TV programs were Inspector Morse, Taggart, Prime Suspect, The Bill, The Chief, 10 O'Clock News, 9 O'Clock News, 6 O'Clock News. As well as PCs I spotted Sergeant Inspectors and I think we get the picture — H-F-W

D.Macmillanmobile, Sutton, Surrey

WRITE A LETTER AND WIN A GAME SHOCK



WRITE NOW! In our fourth week of giving away free full price games to the best letters we receive and our first ever reader to be interviewing their games right now. This week there's another top seller to be won — so you should actually get involved in specifying the game you'd like to win when you send your greatest letter ever received in the history of Express this week.

3) **ATARI ST** — the three top digital samples for this week.

4) **AMIGA** — EMERSON SOFTWARE'S impressive space trading simulation up to scratch!

5) **ATARI ST** — VIRGIN'S latest F12.

6) **COMMODORE 64** — IMAGE WORKS' Peaking Site!

7) **AMIGA CPC** — JEFFREY'S JAWY

8) **PC** — INSTRUMENT Media's

To get writing on scratch under the sun and win yourself a free game!

Betamax 2?

WHAT'S ALL this fuss being made about CDTV? Everyone who is anyone realises that as soon as Sony gets its marketing people into gear and its CDT-1 product fully developed, Commodore's attempt at multimedia will vanish into the realms of Betamax and VHS2000. Martin Roberts, Kincorth, Scotland

OK, Martin but just remember Betamax was a Sony format won't you?

Just send cash

WHEN YOU unmercifully dumped all of the 8-bit columns, I like many of the other thousands of 8-bit readers, stopped taking your purple rag. Several months later I have to hold my hand up and be counted. The X6 now lives in the cupboard under the stairs with the tent and kayak that we never use and an Amiga takes pride of place on the desk.

Year abrupt 8-bit cult left me first angry and then determined to do something about it. Time doesn't stand still so I'm now a 16 (or was that 32) bitter. Without Express's help I would still be in the dark ages.

Jack Spreston, Wistaston, Cheshire

DIY VR sims

IF EVERYONE who read MOE took notice of what you say, we'd all be using Workstations, Virtual Reality Simulators and 3D Laser Holography for entertainment.

Get a life. People don't have the cash or the desire for these Ferraris of the digital world. Stay with bread and butter subjects. We don't want expensive toys to look at. We want realistic things to buy and make.

Stuart Kennett, Halifax, Yorks

OK, we'll do a Circuit City special on DIY virtual technology in the near future just for you...



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THE MONSTER STEREO CARTRIDGE

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- ★ Most major software houses are supporting the MSC
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AMOS COMPILER BENCHMARK

Fans of Maniac's wondrous games creation package AMOS 5 will be pleased to learn that the compiler will be with us in a matter of days.

To be published under the new Extreme Software banner (phone 0325 8708888), the compiler promises to halve the time AMOS programs, typically doubling their speed. Speed isn't the only advantage, however. Because AMOS 5 programs will be turned into super-fast machine code, there's no need for the old and tatty AMOS runtime system, therefore allowing you to produce programs that are truly stand-alone.

At the recent European Computer Trade Show, Amiga was also showing off the first real extension for the AMOS language, in the shape of the much talked about AMOS 3D. It's been previewed more times than the CDTV before it's really going somethin', but it seems that we may finally get a chance to add true 3D graphics to our AMOS 5 programs.

The package (which comes complete with a dedicated 3D object editor) claims to allow anyone to produce games like StarGazer in AMOS Personality. It'll believe it when I see it.

JAGGIE-FREE FONTS

Zen Computer Services has launched a new package which is sure to be of special interest to anyone involved in desktop video on the Amiga. Called Amiga (good name lad), it's a powerful font enhancement utility that smooths out the jagges of standard Amiga bitmapped fonts, therefore making it ideal for producing professional looking video titles.

Just like the font scaling utility distributed with many Gold Disk products, Amiga can produce 256-line different scaled down versions of any standard Amiga font, smoothed using four brightness levels. This also automatically converts the fonts to colorfont format, so you'll need a colorfont-compatible package like EA's DeluxeFont 3 if you plan to use them.

The package allows you to produce point sizes up to an impressive 302, although this kind of operation will require large amounts of memory and

processing time. Zen recommends a processor accelerator and at least 1Mb of RAM, though these are not a necessity. Amiga is available now from Zen for just £40. You can reach the company on 083 793 1931.

SUPER ECS ROOM

If you thought the Enhanced Chip Set was the bees knees, then you're in for a shock. Commodore is already working on a vastly enhanced chip set that will push the Amiga's capabilities still further. OK, most of us still don't have the current Z icons on Commodore, get you act together, but that's no reason for Commodore to wait on its laurels. No sir, Commodore's research and development people really seem to be getting down to some serious work.

During an interview published in a well known UK monthly Amiga magazine, Commodore's head honcho, Irving Gould, revealed that a new chip set is in the works. When questioned about its capabilities, he went on to add that the new chips would add more color on the C64, including such things as extra colors (let's face it, the Amiga needs them) and even more chip RAM (about 8Mb but no more than 16Mb).

Exact specification details were rather lacking (Gould himself admits that 8Mb is no stretch, but he assumed us that Commodore is committed to staying with the state of the art).

BOOKS FOR BOFFINS

If you're after a good read that will teach you a thing or two about your Amiga, then look no further than a couple of home-grown books from prolific book publisher, Bruce Smith. Books (phone 0727 412431).

Bruce has pulled together some of the most experienced and certainly some of the most knowledgeable Amiga journalists around, including such well known names as Mark Shady, Phil 'Shady' Smith and Paul Andrew Davies. Those of you who study the monthly will have no doubt seen work from these writers; they contribute on a regular basis to both publications as Amiga Format, Amiga Shopper and Amiga User International.

GAMES FOR JUST £3!

If the recession is finally starting to bite, then take comfort in the news that Prism Leisure has launched a new range of 16-bit budget software. OK, nothing special so far, but the good news is the price of the games... just £2.99. Just think, you can now buy commercial games software for the same price as PC software!

If you'd expect, none of games offer particularly ground breaking material, but there are a few surprises to be had. In fact the range consists of 15 titles, all of which were previously sold for considerably more than their new asking price. These include such classics as Kevin Team, that ever happened to Mini Football Manager, Acorn's Mouse Trap, a great little platform game, Great 80s (yet another platform

game in the Music Wheel mould), Xanadu Gold Pit (a very cheap and cheerful SuperGolf clone), Las Vegas (a fruit machine game) and Plates (a totally wacky vertically scrolling shoot-'em-up).

Hopefully more companies will follow Prism's lead, with more (and hopefully better) software being made available at what is undeniably a remarkable price. With leisure software having such a short shelf life, it's easier than logical that software companies can maximise the sales potential of a particular product by targeting it to the budget sector. It's tempting for these companies to sell budget titles at the cost of the current E16 price level, but while being cheap for 16-bit software, this is still a far from ideal price.

Many of Bruce's Amiga specific publications are very much still 'in the pipeline', but two have already been released. Both written by Mark Smiddy, they are *Mastering AmigaDOS* volumes one and two. Volume one costs £21.95, but you can also obtain a free diskette which is packed with 8.4M useful utilities and source code. For many of the examples given in the book, I have the old 'boring fingers, don't you know'. The second volume costs just £17.95, but it's just as thick as the first (over 300 pages).

Volume one starts off with an introduction to AmigaDOS, looking at such subjects as how directories are structured, how to move around a disk and a basic introduction to the fine art of working with AmigaDOS commands. The C64 command gets a deserved good going over, with successive commands receiving pretty much the same treatment. Then it's on to such subjects as the AmigaDOS Shell, wildcards, file protection, environment variables and a lot more besides.

Volume two, which was actually written before volume one, is a complete reference to the AmigaDOS command set that covers both 1.3 and 2.0 of the Amiga's operating system. Everything is laid out in a clear, no-



* Does the Amiga's command line interface confuse you? If so, then the *Mastering AmigaDOS* series of books is for you.

numberous fashion that will allow you to find out what you need to know in a matter of seconds.

I've seen a fair number of AmigaDOS references guides in my time. Indeed, I've got a shelf full of the damned things but none go as far as these two books. I feel it may seem rather too technical at first, but as your skills progress, these books will become the go-to source for reference. Whether you're just starting out with AmigaDOS, or you're a seasoned C64er, the *Mastering AmigaDOS* series is a recommended purchase.

Jason Hobson

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MINI MUSIC SHOW

Anyone who took a stroll around the second MDI Music Show, would be left in little doubt of the ST's dominance in the MIDI market. On practically every stand at the show an ST could be seen controlling synthesisers, hardware controllers, drum machines and sequencers. This dominance will be more impressive when you realise that only two other machines were on show on the stands: a track builder PC and a 16-bit Amiga game machine.

There was a gangly army of software and hardware launched at the show. In fact, nearly all the stands had some new package on show for the first time. Capricorn's sister magazine ST FORMAT was showing a stand with Alan in it. On the stand was the first public showing of the brand new Megastyle ST. This was running version three of C-Cubed Notator, which was in turn, controlling a Yamaha ST-77 synthesiser. What's more, the Megastyle ST was multi-tasking via C-Cubed's Softlink package. This was a timely reminder to the few Amiga owners who showed up, that the ST can multi-task just as well as any other 16-bit machine.

The boy's or the Audio Visual Research stand were demonstrating what could well be one of the best pieces of hardware of the year. Their 16 bit sampler can operate at frequencies between 160Hz and 44.1KHz, the latter being CD quality sound. What's more the software has been completely re-written to exclude tape track type controls and a plethora of keyboard shortcuts. The hardware's

been modified so that it now operates at 64 times over-sampling on input and four times on output. At £700 this is a professional sampler in a ridiculous price bracket. AAR is on 0892 577348.

The School of Radio Engineering was touring its 15 Standard MDI courses. This company, which has been around for 14 years, specialises in guiding students through the murky waters of MIDI via hands-on experience. There are three MDI courses: basic, intermediate and advanced. The former deals with such subjects as 'tronicles of MIDI' while the advanced course covers things like 'interfacing pre-MIDI equipment'. Prices start at £15. Telephone 071 609 2653.

Intromic is an Italian company which has just released a package called Sample Tools. This program enables you to keep a database of some 18,000 samples. Snippets of the sample itself can be played back through a monitor and the whole wave can be edited in memory. The program works with S-10000, A30, 5-350, 5-330 and 5-50 samplers, making it extremely flexible. Interested? Call on 0339 011/984666.

GAITS UPDATE

Gaitz, producer of the Sequencer One software, are awaiting an update of the popular budget sequencing program. Called over for it, was for T.A.T. Sequencer One. Gaitz promises that T.A.T. includes conventional notation editing, event list editing, simultaneous MIDI/RS232 recording, sys ex bulk handling and better note editing facilities. The release

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LEMMINGS, probably the world's most addictive computer game, marches onto the ST.

date is pencilised in for the autumn.

The team also launched The Hi Kit, a new music composition program which helps a novice to create drums, bass, organ/piano patterns or even complete pieces of music. Gigs are on 26/11/91.

Platinum twin sample friendly revolutionised hard disk recording by releasing a very budget version of his popular record/playback medium. The Adam system works with any 3.5" and can be used in conjunction with C-Lab or Stamberg's sequencing software. The basic package costs £32.95 for the hardware and controlling software, while the DAT board costs £359. DAC, the British distributor, is the package, is on 0784 462175.

Digital Music was demonstrating Atmosphere and Prodigy in two revised modular sequencing programs. Atmosphere, the more expensive package, is a multi-tasking sequencer which can operate up to 99 tracks. Price is on 071 586 3445.

DON'T BE A LEMMING

After a slight wait for the ST version of this game (ironic, isn't it?) Bigbox has released Lemmings to an eager ST community. If you haven't heard about this slightly original game, then a brief synopsis might be in order.

The idea of the game is to guide a herd of (or so) lemmings safely to a gateway. On the way there are a number of obstacles, such as big drops, flames, water and so on. The lemmings aren't directly under your control. However you can tell individual residents to perform tasks, such as re-directing the traffic, exploding (yes really), digging and parachuting. This you can

do by laying a lemming to the gateway at the end of the level.

Lemmings plays like a dream. It really is a frantic game, which has doored me for more than a few hours of precious sleep. You see a side-on view of a landscape which can be scrolled left and right via the mouse, then little furry chaps start dropping from the skies and you're left frantically stopping traffic, sending lemmings on patrol. On occasion the screen looks so simple that you think you'll get it right first time, but trying to get these blemish lemmings to do anything right is like trying to direct the traffic around the A40 Tramline.

Completing a tricky level of Lemmings is comparable to passing your driving test. The wait that is it a busy person aspect will kill the game's addictive quality. This is a side of games design which is all too often left to patchwork. If you're taking some exams in the near future, don't buy this game.

DON'T BE A LLAMA

A little footnote. If you turn to the Public Domain section of this great organ, you'll discover a review of a shareware game called Llamato by Jeff Weller. Having received this game myself I can say buy, go out and buy it yesterday. When programmers like Jeff get so discouraged by the whole computer games industry that they have to resort to shareware, you know there's a problem.

Apart from the game's reasonably addictive qualities, it's a gem. Smooth, rapid graphics, crisp samples and good humour make this an all-time classic.

Andy Hutchinson

C64

ASHES TO ASHES

Recently, it seems that a week cannot pass without a 'transverser' in the world of the C64. This week, it is the turn of a price cut for the C64/105, which, if true, could only quicken the demise of the 164.

Looking at the situation realistically, could Commodore have dominated the console market with the C64? Technically, it has. But edge over the Sega, but having been launched on the back of another machine's success it paid its代价. Don't rush out and add your £20 to get away - like price cuts will inevitably increase the copy base (and popularity) immensely, but if older consoles go from strength to

strength, the 164 only has a couple of years left to live. If and when it does disappear, it will not have been in vain - it started an interest in cartridges, which will no doubt profit the rest of the 164. Heaven if they are too expensive by half, it all appears to be down and gloom at the moment, but I ask if the situation isn't the same - when the Spectrum market disappeared, TRS-80 the time to start worrying.

A GOOD WHINING

I received an interesting and lengthy letter from Paul Copley this week - thanks, Paul! He had some very strong points to make about Commodore, the demise of the 164, and the obsolescence

DS. His letter dwells on the subject of the currency, cassette disk struggle, and highlights that the price of disk drives should be brought down in order to inject some life into the machine (and indeed to provide the cartridge with some sort of "competition"). He also states that if Commodore continues to attract experiments from the C64 to the Amiga, there will be few respectable programmers left and subsequently the quality of software will deteriorate rapidly. Eventually, he adds, the C64 market will consist solely of budget games and will eventually stagnate. What do you think? Paul, but there are thousands of competitors; programmers/artists/musicians out there just waiting for their big break. I wouldn't worry about software stagnation just yet.

Finally, he gave a few suggestions on how to improve the column - need assured, he's taken some of your thoughts on board. If you have something to get off your chest, or if you have any other ideas, criticisms and the like, get them down and send them to: Andrew Roberts, New Computer Express, 30 Monmouth Street, Bath, BA1 2SW.

A TO Z PART 2

Alright, you've been desperately counting the days for this week's column as here it is... the final part of the A-Z of essential games!

N - Nebula (Neowiz) Probably the most original game concept ever, this cutaway platform game can shoot'em up provides lasting entertainment. Fruthing, but fun.

O - Octopols (Ergo) This was labelled a Saxon clone when first released, but the similarities are only minor. The game also boasts a charming (and technically excellent) vertical stage, adding to the immense playability.

P - Parakeet (Ocean Services Software) always delivers the goods; fast and furious action across five superb parallax backdrops. There are also some neat puzzles in there, but what really shines in the epic 15 minute soundtrack - awesome!

Q - Quedes (Thalamus) Possibly the only decent game beginning with a 'Q', this 10 stage puzzle game is a tough test of skill and co-ordination. Silly graphics and bouncy music accompany the faxing gameplay.

R - Retrograde (Thalamus) The largest collection of superweapons ever seen! The seven levels combine frantic horizontal stages with tricky vertical ducts, each one followed by a gauntlet of membership. Original graphics... funky music... a superb shoot-em-up.

S - Star Fight (Imagine) Quite unusual, the graphics are adequate, the sound annoying, but the game itself is totally compelling! Fans of the arcade original will love this conversion. It's difficult, even unfair in places, but keeps you hooked for weeks.

T - Tetha (Silversoft) Other choices, of this utterly splendid concept (Wellins, etc) come nowhere near to matching the genius of this game. So amazingly simple gameplay is the key to its lasting interest.

U - Up 'N Down (US Gold) One of my all time favourites... seriously! It's a truly lovely game, with elegant graphics and a hilarious tune. Difficult to track down, but if you've got it - hang on to it. A classic!

NAME THAT TUNE



Now's a little easier for you. What's the connection between RoboCop and a racing machine? Post your answers and leave comments about racing skills. The actual answer is that the music which accompanies the latest Amiga racing machine is identical to the music from the title sequence of the RoboCop game. Don't ask me why. Just send in your suggestions in the back of a used £20 note.

V - Vendetta (System 3) An interesting Ninja warrior boasting some wonderful Doink graphics. The racing stages serve to enhance your enjoyment, while the puzzles are well-paced. Oh, and who can forget the accessible intro? I nearly did!

W - Wizard (Cheat) This game seems to defy definition - is it a shoot-em-up, or a puzzle game? When can it be original and fun. A whole host of player combinations, original (and colourful) graphics, plus some beautiful Galaxy tunes. They don't make 'em like they used to... phew.

X - Xenius (US Gold) Underneath the appealing aesthetics lies a really playable game, honestly. It's difficult to the arcade original right down to the last blade of grass, but lets itself down as a half-price game. They don't make 'em like they used to... phew.

Y - Yu Ar Yang-Fa (Dragon) The first game from the reputable

Colin Walsh/Andy Wellins trio, the game is

inspiring beyond belief! If you

persevere, there is a thoroughly

entertaining game in there somewhere.

Graphics are accurate (and move FAST),

and the game title screen alone is

brilliant.

Z - Zak McPharlin (US Gold/Lucard)

I'm lost for words. The amount of detail

in this game is incredible. A superb, if bizarre storyline, detailed graphics,

instant playability and hysterically funny

Disk only, but worth it just to see the

exploits of these stupid Alien

Mindbenders!

So there you have 4 - 26 of the best DS4 games ever. Of course, it's a matter of opinion and personal taste, but I have tried to include a wide assessment of software to please **ME** of you. If you're not happy with my choices, drop me a line and say so.

COMING SOON

Finally this week, a few things to look out for over the coming weeks... *May Sails* has finally surfaced, having been held back (temporarily) as a result of the Gulf Conflict. It's in the shops now and what a stunner of a game it is. *The Famous Five* from Imagine Variations is a very poor 2D game conversion, so steer well clear. *From Dimensions* carries on with its fast and fun arcade-style game, featuring some scarily clef galaxies (heh, heh).

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Here Quest is one of this year's better RPGs. It doesn't follow the plot of the original board game exactly, making it a refreshing challenge for even the most ardent role player.

But not least is Prestel 2, an

out and out blast in the mutated tradition of Generation West - lots of violence. Fans of the film will simply adore it, and rightly so. It's great entertainment.

Andrew Roberts

**AMSTRAD CHOPS SENIOR POSTS**

The big news this week is Amstrad's announcement that 37 of its staff are to be made redundant. The majority of staff, 25, will take effect at the company's Brentwood headquarters, while the rest of the jobs will go to various other sites around the country.

Big names on the way out include the managing director of the Amstrad UK division, Barry Young, and Peter Roback, Amstrad's software and peripherals product manager. Roback was the leading light behind the GX4000 and Plus machines, although his departure is not being attributed to the poor performance of these machines at the shops over Christmas.

Amstrad is blaming the general economic recession for the

redundancies, pointing out that many other companies have had to make similar cuts. Amstrad's man board, headed by Alan Sugar himself, will now take over UK operations.

Meanwhile, there's some speculation in the moment about possible new deals involving the GX4000 and Plus software. Help watching this space.

NAVY SEALS
A game about terrorism in the Middle East probably isn't in the best possible taste, but since when have software publishers been bothered with taste? Besides, Oregon's latest cartridge game is a licence of a film, albeit, you've never heard of Navy Seals: the film? I'm not surprised. It went down like a lead anvil in the States, and there are apparently no plans to put it on general release over here.

The RE followed the exploits of a band of American special forces types, a bit like the SAS. SEAL actually stands for Sea, Air and Land, and is nothing to do with those black military brutes they have over there.

There are six levels to the game, each taking place at a different location.



+ **Amiga band, aren't they? Don't fall off, or you'll be going home in a box-beat...**

It's pretty standard platform/shooting action stuff, but the console hardware has been used to good effect to provide excellent, atmospheric backgrounds, smooth scrolling and interesting detail. Your main job throughout is to explore each level and plant bombs or tap out codes packed with military hardware. There's not much of an art to this – in fact, you simply have to walk past a crate to plant your explosives. Your main job is going to bring leaps and dodging every few. One good thing is that once you shoot off one of the enemy, he doesn't reappear if you re-visit that section later. Just as well, as the game is tough enough as it is.

What makes the game all the tougher is that you are up against a strict time limit. Even on level one it is extremely tight, so you're looking at a game that's going to test you a long, long time, just as long as you don't give up with frustration.

You control a five-man team as you embark on your quest to save the hostages (oh yes, we've forgotten about those, hadn't we? Ahem...). These five men effectively make up your store of lives. When one does his dog's the next takes over.

Your men are all very athletic, swarming like overwielded gibbons from platform to platform, and generally looking hard as nails, but it only takes one hit from an enemy bullet to kill

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+ **Navy Seals: You can pick up extra weapons from crates lying around the levels. Here, you've found yourself a juicy little homebrew...**

item. And falling too far from a platform can't up them very tough too.

That, basically, is about it. Now Saku looks decent, it plays well and it's presented beautifully. If only it wasn't so difficult. Either Ocean's playtesters are too good, or I'm getting old. (Don't answer that!)

TRAITOR!

This letter from Phil Morley of Peterborough is a bit ambiguous, but I'll put it in anyway because there may be something in it for all Amstrad owners out there...

"This is your last chance, lovely 6128 owners (ours of whom I used to be). I have a collection of 6128-specific magazines (check full of gripping 6128-specific info piled under my bed) awaiting the knockers part - Meccs, Amstrad Computer Users, Amstrad Action (a veritable jewel) and mucho books at knock-down prices.

"Then I decided to be anyone offering 50p or thereabouts a copy - boy in bulk, save money. The men in bright orange jumpsuits will come to take 'em away soon, so the men have no room for their wrestling matches under my bed.

"All jokes aside, I have an enormous database of 6128 subjects, so if any of your discerning readers has a specific query I can probably find a mag with an article covering it.

"I will send a list to anyone who

phones me or writes to me. I now own a PC and have been looking in the pages of PC Plus."

Well there you go! Any old mag? Looking for an article on some weird and wonderful Amstrad-related subject? You can reach Phil at 11 Kingfisher Road, Westbury, Peterborough PE7 1YF, or call him on 0733 204534.

GARFIELD GETS A POKE

Well, he does in Garfield's Big Fat Hairy Deal, anyway. Garfield from Mardon supplies this tape cheat to stop the feline feline falling asleep.

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THANKS FOR THE MEMORIES

It's often said that the human memory can only bear so much in mind at once. For A3000s and 4000s, even that could be a gross over-estimate. Unless you do nothing other than play *Mad Professor Warlock*, you need that extra memory. And now is definitely the time. Even Amiga itself has reduced its memory prices.

Upgrading an A3000 to 380 has never been cheaper. It should cost you less than £70 from any number of well-known suppliers. The eight chips for a 400 can be had for as little as £25, though your thumbs don't hurt when you plug them in.

Intellivision's model is *Eaglestar*. The advisory aircraft is a BAC 202 and not too

The Hornets look remarkably like Hornets and take off vertically, like eagles fly very fast and live over the forest, and so on. The scenario is better; there's a variety of missions, which we give a little background and context in the magazine, so you know why you're fighting all those Chinese fighter planes over the Great Wall.

There's also a couple of new missions. The really targeting system in MG 29 is more primitive; you have to 'lock on' the air-to-air and air-to-surface missiles before firing. Enemy planes often get away, too. In addition, when the chime for missile lock goes off, you know you're going to hit your target.

The enemy planes in MG 29 are a lot more unpredictable than those in Intellivision, who have very poor tactics; you can often predict exactly what they are going to do.

Admiralstar only gives you 'out of the cockpit' views, but MG 29 lets a really spectacular chase plane view and the view from the cockpit tower. You can also peek a peek at what your opponent can see, and get a 'Stormer' Norman missile's eye view as it streaks towards its target.

MG 29 shows just what *Intellivision* 2 could and should have been. With a 'save' facility as well as the pilot's score table and a better control system, it would have been near perfect. As it is, Donker still has a deserving winner on its hands. If you like flight sims at all, go out and buy MG 29. It's almost worth the £40 you'll have to pay!

Donker is on 081-750 2224.

LASER PRINTER UPDATE

Calligraph and Computer Concepts both continue to upgrade the printer driver software for their respective standard resolution (300dpi) direct drive laser printers. Both the latest versions show major speed improvements.

Computer Concepts' LaserDirect remains faster overall, particularly with

its 'quickest' software option. It's sticker too, with printing 'in the background' so that you can get on with something else while your printer's still churning away.

Calligraph's machine has always lead on the 'fuzziest' feature count, and one important new one in the quality of the grey scales. The current software gives you a choice between three greys (50% normal or better quality grey tones) and an increase of seven greys. Choose 16 greys - perfect for creating complex, close-in *Computer Concepts' Laser Direct* hires.

The original price difference, which had made Calligraph's machine such good value, has all but disappeared. Both cost close to £1,150 inclusive. My choice would still be the *Computer Concepts* version. But if you're a First Word Plus user, or if you have 2 software, it could be better to look at Calligraph's *Admiralstar*. The Option emulator allows it to be used from BASIC or First Word Plus. *Computer Concepts* is adding a similar feature to its driver too, but Calligraph does have the lead. On a small network, the *Admiralstar* can be shared by several Admirestars, although handing this up the network completely for a few seconds, you don't need any extra software. *Computer Concepts'* network printing demands a copy of its Postscript driver. Shareware version around £200 on the Arc with the printer.

At the current prices for these 300dpi machines, *Computer Concepts' Laser Direct* is £1,150 inc VAT plus a £100 VAT relief (a street price about £1,000). If you shop around a bit, look to be a real bargain. Just add more, you might as well then yourself to 600dpi.

Calligraph is on 0223 461143, Computer Concepts is on 0442 639333.

NEXT WEEK

A look at what's new at the Computer Show this week.

Ken Coomann

Atari ST Owners!

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• MG 29 *Eaglestar*: the game that *Intellivision* should have been.

MACINTOSH

GOPS!

A bit of a cockup, I'm afraid. In the March 15 issue of Express, I wrote a feature on Apple's two new printers. Unfortunately, I just a bit wrong. The TrueType typefaces Times and Helvetica, which are bundled with the printers, were not created by Bitstream. They were, in fact, designed by Lanigan. Furthermore, Times and Helvetica are registered trademarks of Lanigan AG and/or its subsidiaries.

Thanks to Steve Worth of Lanigan-Hell for pointing that out.

MYTHS...

So, what's been happening this month? Well, the new Canadian Computer catalogue was pushed through the door, for one thing. For those who don't know the company, Camelot specialises in shifting software and hardware at low prices. To fit that, much of the software is 'grey' imported from the States, which means that getting support from the manufacturers is sometimes a little tricky. On the other hand, if you're not bothered about support and upgrades and things, they often manage to get stuff fast at the clear fairly quickly.

Anyway, back to the catalogue. It's just a small point, but handy when you're photographing your Mac for inclusion

in the catalogue, you'll do well to have a better image of the screen than the floppy disk with a flashing question mark which normally means that something nasty has happened to your Mac...?

And, of course, System 7 is finally with us. After more than two years of development, it's appeared - and damn good it is too. For the M story, refer to the MacUser elsewhere in this issue, but as a slightly more roundabout note, it was 10 days earlier this week that while programmers and developers in the States are fully confident in general, there are over 1,000 minor bugs in System 7 which have been identified but which haven't been sorted to fix. Of course, my source for this was totally unscientific, and I'm sure that the information is incorrect...

FIND DRAFT

A brilliant package came into the office the other day - so I'm going to address only it at now. Actually, it's not the sort of program that everyone will want, but for its rather specialised market, it's the best I've seen.

Find Draft is a package for aspiring screenwriters; that is, people who want to write manuscripts. If that's not what you're into, then the next few hundred words won't be too relevant to you, but

then, we all have our hobbies, or a specialised hobby or job and you want to know what's available on the Mac for you. Drop me a line or e-mail me or C64 and I'll do my best to find out what's about.

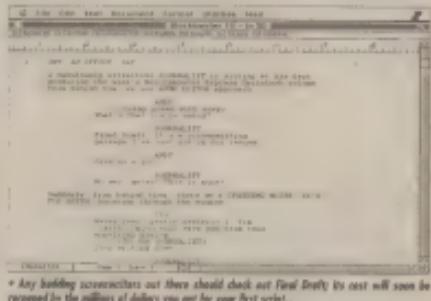
Anyway, back to the plot...

Scritplays are formatted somewhat differently to, say, scripts for plays. All character names and dialog are centred, for instance, and various elements of the script have different margin settings. C64, you could format a scritplay with a normal wordprocessor; it's just that it would probably take you the rest of your life to do so. And that's why programs like Find Draft are created - all the formatting is taken care of, so you don't

have to worry that your script will never be read because it doesn't look right. This, it's true. They really do reject scripts for that reason.

The program is copy-protected, a 'lesster' with people would also copy. Basically, you can either run the program off the floppy at the time which is a part of it you can install it on your hard disk. But if you install it and then your hard disk dies, you can't install it off the floppy again. Sure, the manufacturer will probably give you a replacement copy, but that's hardly the point.

Anyway, that's over. Find Draft does its job extremely well. Formatting for each of the different script elements



* Any budding screenwriters out there should check out Find Draft. Its cost will soon be recovered by the millions of dollars you get for your first script...

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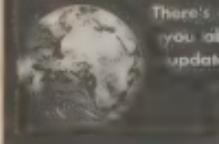
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WHOLE WIRED WORLD

There's a whole world of computer news out there and Steve Gold's the man to tell you about it. This week, a compression system that really compresses, multiple updates for Lotus 1-2-3 and Multimedia PCs from Tandy.



WORDUP! BOUGHT BY ATARI

Atari US has purchased the source code and reproduction rights to Wordup!, a graphics and word processing system that pioneered the document processing field in the Apple II marketplace.

As yet Atari's plans for the software are not clear. US spokesman Bob Brodie, however, says that the package may be renamed and released with the ST. This suggests that Atari will bundle the package with all STs sold. According to the Zzap! on-line newswire, possibilities include bundling the software with the FAM-G-CDS and offering it as a free startup package in all new Mega STs and TT computers.

COPYRIGHTING CHIPS



* Preliminary legislation is passing through the US Government to protect chip designs.

Software may be protected under international copyright rules, but did you know that chip technology, technically at least, doesn't seem to be covered? No, neither did I. Maybe that's why preliminary legislation is passing through the US government that aims to encourage the development of worldwide protection for supercomputer chip designs.

According to the US Government,

Lotus' US division has unveiled a new version of its popular 1-2-3 spreadsheet software for PCs. Version 2.3 of 1-2-3 includes an interactive "What You See Is What You Get" (WYSIWYG) display and presentation-quality output capabilities, spreadsheet editing tools, a 16-line editing feature and interactive dialogue boxes, as well as improved help facilities and error reporting.

Release 2.3 is for all PC users. 280- and 386-based system users are catered for with Release 3.0, which runs under DOS and OS/2. Lotus is also currently beta testing Release 3.1 Plus, an upgrade to Release 3.1. US shipment is expected within the next few months.

Prices remain the same in the US on the upgrades, so the UK pricing should be about the same as well.

semiconductor chip designs are not covered by traditional patent or copyright laws, but instead are covered by the 1984 Semiconductor Chip Protection Act in the US. International copyright law does not officially clause, cover chip technology designs. That could all change soon.

Government officials claim that the legislation is needed to extend international protection for four more years, during which time it is hoped that the US will be able to negotiate permanent, multilateral protection of chip designs. While the US government currently has reciprocal copyright agreements on chip copyright protection with 19 other countries, it has failed to negotiate a truly international treaty to prevent widespread piracy of chip designs. The proposed legislation is designed to correct this.

CHEAP LASER PRINTER

Hewlett-Packard's US division has unveiled what it claims is its most affordable desktop laser printer to use the HP

PostScript printer language, the \$1,595 HP LaserJet MP printer.

According to the company's Palo Alto, California headquarters, the 4ppm (pages per minute) unit uses resolution enhancement technology to produce the best 300dpi print quality of any printer in the sub-\$2000 class.

HP's second 4ppm laser printer, the new machine is compatible with HP's other PCL 5 laser printers, the HP LaserJet II, IID and IIP printers.

TANDY'S MULTIMEDIA PCS

Tandy's US division, Witch Hazel, has unveiled its first Multimedia Personal Computer (MPC) machine.

So where's the MPC in a PC that, like the original MSX (remember that?), adheres to a set of minimum hardware and software standards for PCs set by a group of computer manufacturers - headed by Microsoft and Tandy - at the end of last year.

Unlike MSX, the MPC standards do not specify that programs designed for one MPC machine will run on another



* The upgrade to Lotus 3.1 is being beta tested now

What MPC is designed to do is to standardise the multimedia PC environment between PC manufacturers.

Tandy chose the Davis '91 configuration in Palm Springs, California, earlier this month. It launch its five new MPC PCs. In addition, the company rolled out a set of conversion kits designed to turn any standard PC - not just its own - into an MPC machine in a few minutes.

Each of the new MPC machines come with a Tandy CDR-1000 internal CD-ROM drive, a multimedia expansion adapter system with audio circuitry and CDIF-1000 interface, a single 3.5 inch floppy drive, 512K of video memory (or Super VGA graphics) and a mouse supplied as standard.

These are the new machines come with 2MB of RAM and a 40MB IDE Bravewriter as standard - the M2500 LX/2, a 16MHz 80386-based system costs \$2,599, the M4020SX, a 20MHz 80386SX-based system, retailing for \$3,299, and the M4016GX, a 19MHz 80386-based system for \$3,999.

The remaining two models in the Tandy MPC family are a 25MHz 80386-based system, the M4025 LX, costing \$4,599, and a 33MHz 80386-based system, the M4933 LX, costing \$5,499. Each comes with 4MB of RAM and a 165-MB IDE Bravewriter.

The upgrade kit comes with a choice of internal or external CD-ROM drives, and cost \$799.95 and \$899.95.

Tandy UK has not announced to launch the machines here, but given the high level of interest in MPC technology, and the fact that these are the first MPC systems to actually ship to the marketplace - in the US at least - it's a fair bet you'll be seeing them in Tandy stores soon. In the meantime, you can contact Tandy UK for further information on 0101-817-390-3011. ■

ADDSTOR LAUNCHES 'LOSSLESS' PC DATA COMPRESSION SYSTEM

Atari of Menlo Park, California, has unveiled Superstor, a program that compresses a portion of system with data compression systems. Packages such as ARC-100 and ZIF-ing programs compress 750MB into just 200MB, reducing the amount of disk space these files require. But because of the nature of the ensuing systems used, some 90MB actually expand when compressed.

Atari claims that Superstor gets rid of this expansion problem. The 2128 software package is designed to interface with The Stacker, a harddrive utility

system that was first seen at Comdex Fall last November. Superstor prevents a software-only, 10MB drive from using the cluster system used by existing compression programs. This allows the package to make more efficient use of available disk space, so when the error-checking codes add to the actual data recorded on the disk surface, the advantages of sector recording outweigh the losses.

Superstor processes data by a factor of two or three. The data compression program is just a 128K package, consumes just 20% of system memory, plus another 4K per drive on the system. If you have a 20MB disk system, the program will load into high memory.

The secret of the Superstor's success is that it writes to the disk on a sector-by-sector basis, rather than the cluster system used by existing compression programs. This allows the package to make more efficient use of available disk space, so when the error-checking codes add to the actual data recorded on the disk surface, the advantages of sector recording outweigh the losses.

Circle Addstor, 2100 Behrman Drive, Menlo Park, CA 94025, United States. Tel: 0101-817-390-3011. ■

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241.00	242.00	243.00	244.00	245.00	246.00
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271.00	272.00	273.00	274.00	275.00	276.00
281.00	282.00	283.00	284.00	285.00	286.00
291.00	292.00	293.00	294.00	295.00	296.00
301.00	302.00	303.00	304.00	305.00	306.00
311.00	312.00	313.00	314.00	315.00	316.00
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331.00	332.00	333.00	334.00	335.00	336.00
341.00	342.00	343.00	344.00	345.00	346.00
351.00	352.00	353.00	354.00	355.00	356.00
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TECH TIPS

Need power that can be portable, but last for longer than a few hours? Bought a second-hand machine and can't get it to work? Holding on to some terrific tips that other readers could use? Write to Keith Pomfret, Tech Tips, *New Computer Express*, 30 Monmouth Street, Bath BA1 2BW.

Colour Swift

FOLLOWING a recent review in the PC column I bought a Neochrome Master, fitted a colour kit to my Citizen Swift 9-printer, but could get none of my masterpiece on to paper. I have set the appropriate chipswitch on the printer and using printer driver supplied with my ST, which has been informed of the change to colour, cannot get any response when I ask it to print from any source I have tried.

The printers can be set to print in any single colour of my choice and presumably the printer colour kit seems to be dysfunctional. Have I missed some single step in setting things up, or should I get someone to look at my printer, or should I get someone to look at the ST?

Frank Savage, Solihull.



* It's a lovely printer but you'll need the right driver to get the best from it

BEFORE you buy the printer or the ST you're dreading in the repair man, there are still a couple of cheaper avenues open to you. Firstly, are you using the correct printer driver? A telephone call to Citizen could help, but in my opinion your best bet is to contact a reputable PC library. PC libraries tend to have disk upon disk of utilities and printer drivers and more importantly, knew the problems that people have had persuading different configurations of different printers to work with various programs. Often a printer driver may work with several programs and then fall over with others.

Your salvation is probably through picking the right driver for the job. Try Goodman PD on 0782 335656 before you look off to your repair man.

Amiga DTs

PLEASE can you tell me in the right direction with two problems on my 4000: 1) The mouse-pointer "jitters" when in some positions on the screen. It alternates between two adjacent pixel positions at about 3Hz. This also happens when, for example, using GPaint brushes. Very annoying. 2) Joysticks fail to move "right" most of the time, though the other directions are OK. This happens with two different joysticks, which are OK on other computers.

I have looked very carefully at the joysticks-to-motherboard connections, which I understand have been known to fail, but can see nothing amiss. There is nothing else wrong with the computer as far as I can tell. I suspect Dealer, but before forking out rather a lot for a replacement I'd be glad of your opinion on the matter. Any suggestions? I've involved too, isn't she?

A third (and different) question: My Adram RAM expansion occupies the topsoil (and piggy-backs the Gary card) so I obviously cannot use the KCC PC board. But what about the AT/One? Is that likely to work properly in the presence of the Adram?

CG Barnes, Cheshire.

IF YOU are experiencing a jittery mouse pointer and it moves atways at the same place, you should have the Amiga and specifically the mouse port looked at by an expert.

Things that you can try to eliminate possibilities are a different mouse (although I don't sound as if it's the mouse and not the rest of your software I see if any are unaffected).

Your joystick problem also points to a problem within the Amiga. As this sort of problem can be caused by a short circuit, it's necessary to get it sorted straight away. A chat with Amiga technician silicones Mark Smiddy confirmed that there shouldn't be a problem running an AT/One with

AdRAM, but he pointed out that the AT/One connector should be plugged into the Gary socket, then the AdRAM connector and then finally the Gary (Gato Array) chip.

Voda-Moda

IS there a way of connecting a mobile phone to a modem without using an acoustic coupler? The acoustic couplers costs extra and the line drops out too much to make anything but the shortest text file viable. (My phone is a Panasonic E and I am on the Vodafone net.)

Charles Mepnes, Migan.

CONTACT Please for details about the CDLC data modem. It costs £500 and there's a cassette available to allow you to connect it directly to your phone. The modem is catalogue number 8810110006 and the cassette is 5561010007. Recal is on 0655 500286. (And watch the phone bills... they'll be horrific.)

Speedy Speccy

HERE is a tip for programmers and the like who work on the slow editing on the 128 speccy. The simplest way of doing it is to simply press edit in the basic mode and choose screen option. Since the editor only has two lines to scan as opposed to the whole screen, the editing is much quicker. However, if your listing is more than two lines long to each line number, the editor will get confused as some of the listing is on-screen and some isn't.

Here are a few things you may not know about... the RAM disk in the 23 and 33 using the screen option make a nice pattern of something on the screen. Save it to RAMdisk by typing: Save "M:" then save "filename", screen file. Then try loading it by load "filename", screen and notice how quickly it comes on screen.

The other thing you may not know is that you can save

variables on to the ROM disk, so you need not worry about crashing the computer after you have saved some essential info into because the RAM disk does not get erased when the machine crashes or if you accidentally type "rm". I leave you all work out how to do it.

Adam Tonasse, Inverness.

THAT SHOULD kick in the knee for Spectrum programmers wanting to cut costs down a bit. If anyone has any useful programming tips, send them into the usual address.

PC upgrader

WHERE can we get a 16MHz all-in-one system board to upgrade a PC to an AT?

Mark Walsh, Norwich.

YOU COULD try any of the following:

The Chip Shop 061-476 3079
Chipsboards 0463 797859
CMD 0533 313168
RSI 0582 211060
Markard 0323 37774
Hi Voltage 031-681 3032

We recently built a rather nice 386 for the office using chips bought from Silver Shop on 081-309 1111 and can heartily recommend it.

Under cover

The Palion Organiser is a pocket sized useful computer and you don't give it much coverage. My problem is that I need more software than is provided with it and can't find any.

Mostly, I need a database catalogue the various chrome parts that I carry in my classic auto business. This way, when I visit a client, I can check instantly whether the part needed is in stock. The computer dealer said that he doesn't stock "hippies" for toys like the organiser and that I will need to make a serious hardware modification to the organiser to make it run a database. What modifications do I need to make, is it within the

scope of an enthusiastic amateur and what will it cost?

Martin Borman (no relation), Ribchester.

WHAT YOU want to do should be possible without hardware modification, although that will depend on the size of your database. If your database is too big for the CPC, you may need to break it into several sections and load them separately.

For a full catalogue of what's available for your computer, give Peter a ring on 071-292 5580.

111 Arnie's friend

THE AUTHOR of your disappointed "Hello CPC Plus" might like to have less mopey tips about his new machine. I owned the original Arnold and then the CPC128 and gained a great deal in knowledge and satisfaction from them.

There is one book which I'd strongly recommend: *Ready Made Machine Language Routines for the Amstrad* by Joe Pritchard, Melbourne House Publishers.

However, it's best to buy the excellent *Master Assembler* from Amstrad Ltd. In its meat ROM form. Inside a Rombo box it gives wings to the Z80. Not only does it have the full Assembly Editor environment but blocks of Assembly Language can be used simply from Inside Basic programs - very effective speed it needed.

The range of software available in ROMs from Amstrad don't stop there. There are several others, including *Protest* (and what could be better than a resident word processor and spelling-checker!), especially my favourite *BCPL* - a real pedigree compiled language which is a good way to start learning real structured programming, and so stick to use. There is also an excellent book on *BCPL* for the serious student.

The CPC - a disappointing machine? No such thing - look at all the good software it has built

up for it; and can you name even a top-price computer that has a word processor like *Protest* in ROM, which is there at switch on?

John Gray, Eastbourne.

YOUR LETTER reads like a top ten turbo upgrade list for the CPC and we heartily endorse your choices.

It's interesting that you mention SCPL. This is a language that has lived in the shade of C and all of the other trendy computer languages for too long.

Scraping around in the Express archives I found several references to it from four years ago but it seems to be out of fashion. If my memory serves me well, some of the original Amiga development was done in SCPL as well.

2 Experience

The library managed to weigh my carrier bag down with books about simple electronics projects and book learning (I like, but as my teacher used to say [back in the 80s]) "There's no substitute for hands on practical experience."

I don't see your magazine every week, but a friend remembered you having looked at a kit that teaches what electric and electronic components are and what they do. Could you either repeat the article or tell me where to get the kit from?

Martyn Troop, Teufel.

WE COVERED two electronics projects in Circuit City. One was an off-the-shelf kit from Tandy for about £30 that documented 130 electronics ideas which could be built using the kit. These ranged from simple circuits using only a few components to more complex things such as radios and miniature mines.

The '99 in one Electronic Project Lab from Tandy is battery powered and contains documentation to guide you through each project. The other electronics project we covered took the concept of the Tandy mini-project and built it on to a modular breadboard.

The best way to approach what you

want to do is to start off with a Tandy kit and as your familiarity with practical electronics increases, then consider building something for yourself using the breadboard principle. Keep tuned to Circuit City for more breadboard ideas.

3 Laptop power

Compared with a year ago there are dozens of portable computers on the market. The problem seems to be battery life. No matter what the manufacturers say, all of the magazine reviewers agree that most machines won't last above a couple of hours away from the mains. If I buy a portable machine and am led down to returning to a power point every couple of hours, it isn't much use to me in the flexibility stakes.

What alternatives do I have? Some of the stranger machines like the Pogo! and the Palos MC series look to run MS-DOS, but there's no way of getting things in and out other than down the serial port. Is there a non-disk drive MS-DOS portable that will connect to a disk drive by some sort of docking mechanism for loading and downloading to a standard disk drive?

Helen Jones, Lancashire.

MOST of the non-disk drive machines have some way of transferring other than a serial cable. The Palos MC series that you mentioned has a disk drive interface built in and an external 3.5-inch floppy drive available direct from Palos allows you to read and write 720K and 1.44MB disks that can be used in a standard PC.

There are two Palos available, but the £1,295 MC900 is the only one that uses MS-DOS. Another (and cheaper) solution to your problem is to use a standard laptop and carry extra battery packs. With laptops costing as little as £400 for a floppy drive model and £500 for one with a 20MB hard drive, it's worth considering spending some of the money that you've saved on a couple of

FLIRTY. If you're using someone's copyright sounds from a CD you should make sure that the Copyright holder gives you permission. This means writing to record companies, but better legal than locked up...

The software package that will do what you want is Amadeus from Clares and this supports several hardware sampler boards (Amadeus, Amadillo, and Utilities to name but three.) To get a copy of this wizzy program contact your local computer shop or if they haven't got it, ring Clares direct on 0699 48511.



It's no spelling mistake. *Amadeus* is a MS-DOS compatible sampler for the Amigas.



Using a floppy laptop with extra battery packs is the deeper way to compute on the move.

spare battery packs.

If a machine lasts two hours on a pack and you have four packs, you've enough power to be productive for a working day. If your idea of mobile is being able to work in the car, you can utilise the car's battery with some laptops that have a car cigarette lighter adaptor.

4 Big floppies

At an auction, I bought an old CPM computer with four built-in hard drives and four floppies.

When I got it home, I found that the floppy drives are an unusual size, over two-inches wider than the more common 3.5-inch disks. Is this a user's error? Where can I get more of these? Also, can you think of a good practical use for the machine?

Mark Payne, Portsmouth.

A LOT of the older CPM machines used 8-inch disks. While they aren't exactly off the shelf products stocked by all and sundry, most computer retailers can still get them. Alternatively, try computer fairs, the All Format Show, or even radio marts as a source of cheap second hand disks and machine uppers parts.

A good practical use for the machine is perhaps a bulletin board. I chatted to Dave Denki of Aspects BBS in Manchester and he confirmed that for some months, a CPM machine had been the home of his BBS. In order to set up a BBS, you'll need come comes software and a good automatic modem. If you're working on a budget, you'll find that there are some excellent BBS software packages available at the public domain. You'll need an auto-answer modem too. ■

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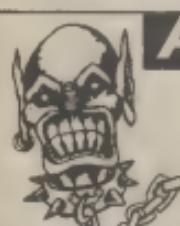
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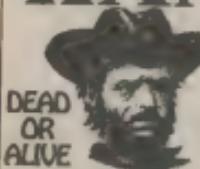
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THREE STEPS TO PERFECTION



Updating, debugging or using a program that you haven't looked at for six months can present an endless stream of problems. Mary Branscombe shows you how to make easy work of it.

However good the program that you have written is, it will seem terrible when you come back to it six months later and try to understand how it works. It will be even worse if you didn't write the code in the first place and you have to use it, update it or debug it.

There are a number of ways to make programs easier to understand and most of them are referred to under the catch-all heading of 'programming style'. That can cover anything from conventions in your code to the use of variables and constants in your program.

COMMENTS

Putting comments in your program that tell you how it works and what does what will be the easiest way of making it easily understandable at a later date. You should always write some form of documentation, telling the user what the code does and how to use it, but the comments are for programmers who need more information.

You should write the comments as you write the program, so that they form a running commentary. If you have problems with the code, the comments can help to show what's going wrong and what you thought a piece of code was going to do. If you add comments once the program is working, you will be tempted to leave them out because they seem so obvious. Be careful - they will warn anything that's obvious to another programmer, or to you in six months' time.

The computer ignores all the comments: they are there to help you, which means you can put in as many as you like. They won't make the program any less efficient and they should make the programming much easier.

If you write out a plan for your program, you can include it in the program file as the basis for your comments. Use the relevant line of the plan to introduce each section of code and then explain what is going on in each section.

You can use comments at the beginning of the program to give you some useful information. You should always include a header something like this:

/*File: mortgage.c

Author: M Branscombe

Date begun: 4/2/91

Date revised: 28/3/91

Purpose: calculate monthly mortgage payments

Syntax: interestCalculator, length, amountBorrowed)

Comments: this deducts tax relief from payments.

Tidy up the printing! */

This makes it easy to find out which version of the code you are looking at and how to edit the program you have written.

You can use the Comments section of the helpfile to make a note of any changes that you need to make to the program, so that you can see at once what has to be done.

You also need to keep track of the names you use in the program for variables, constants and procedures. It is very easy to incorrectly type the name of a procedure or to use the same name for two different variables. If you include lots of each of these at the beginning or end of the program, with a short description of what each one does, then you know what you are using. If you need a new variable, you can easily check that you aren't using an existing name. If you get a syntax error that says something like 'undefined identifier', this means that you are using a variable that you haven't told the program about. If you haven't simply forgotten to define the variable, then you may have spelled it wrong somewhere in the program. Making a list of variables means that you have to decide on one form of the name and use it.

SAVING TIME AND MEAN WHAT YOU SAY

Unless you are programming in a language that restricts you to uninformative variable names, usually a single letter, try to use meaningful names. For the program to calculate monthly interest payments from the interest rate, the amount of the loan and the length of the mortgage, you will need variables to hold these and possibly some temporary variables to hold intermediate calculations. You could use X, Y, Z, A and B, but that won't make it easy to see what is going on if you want to expand the program or just debug it. Variable names like InterestRate, AmountOwed, LengthInYears, Temp1 and Temp2 will make things much easier.

However, don't make the names too long. The more you have to type, the more mistakes you are likely to make and long names may be split over two lines, making it harder to see the layout of the code.

Some languages, like Prolog, will insist on variables beginning with upper or lower case letters. Even if it makes no difference to the compiler or interpreter, you can also capitals to make the code clearer. Decide on a way it distinguishes constants, variables, procedures and keywords. It doesn't matter what you do as long as it is readable and you are consistent. One way is:

All variables begin with a capital letter, so you get

Variable and AnotherVariable.

Put constants in capitals: CONSTANT

Put any keywords in lower case: while, for, do

Write procedure names in lower case, using hyphens, underscores or capitals to separate words: interest-calculation, interest, calculate or interestCalculation.

UNDER AN ALIAS

There will usually be one or two things in every programming language that you are always getting wrong, because you can't remember the construction. For example, many programmers who have used other languages confuse the equality and assignment operators. If C, you write ==, you are copying the contents of variable a into variable b. If you write == b, you are checking whether the contents of a and b are the same. If you find that you are writing == b instead of == a, you can define another operator for equality - an alias for ==.

This code will define an operator called == in which C translates into == for you every time.

#define EQ ==

Now you can write

a EQ b

If you are used to the Pascal assignment operator :=, you may find it difficult to use and you could define another operator instead:

#define ASS =

Now you can write

a ASS b

If you want to break up large C constructions, you can define an alias for a blank space. There is no tab keyword in C and the whitespace construction can be confusing, because it is simply while condition action and you may find it difficult to tell what is the condition and which is the action. If you define do as a blank space, you can put it into your code and the compiler will ignore it, so that you can write while condition do action. The code would be:

#define do /* blank space*/

Other languages have similar facilities. In Prolog, you can define English words as operators to make the code easier to understand. You simply decide whether the word will go before or after a clause or between two clauses and define it as prefix, suffix or infix accordingly. The codes for this are #!, !, = and =!. = refers to the operator and ! to the rest of the program. You can then write:

opbind, edz, 3331.

class #!Value and #!Second Value =

check #!FirstValue,

check #!Second Value.

The number is used to decide which operator the computer will deal with first. This multiplication operator has a value of 4000, for example, and will be the first thing that the computer looks at in any clause that involves multiplication. ■

The

EVENT HORIZON

What's doing, what's with what, with systems, having what's where...

THE PLACES TO BE...

Computer Shopper Show 10-12 May

At the Alexandra Palace, London. Info: 081-888-4488.

PC Database Day 10 May

At the Ramada Inn, West London

The host companies are Manugraph UK, which supplies the Clipper package, and System C, supplier of the Sybase program generator family. Fox Software will give its first full-UK demonstration of FoxFox 2.0, a dBASE IV-compatible relational database management system.

Then follows a talk from Henry Business Software on its range of client-server packages that link together applications running under Windows. It day finishes with the exhibition of Superbase 4 from Precision Software.

Other companies will be there, providing add-ons for the Clipper, Foxpro and dBASE programs. Admission is free.

Call 071-385 1255.

All-Format Computer Fair 11-13 May and 29 June

At the National Motorcycle Museum, Solihull on 9 June, and at the New Horizons Hall in London on 16 May and 22 June. Info: 0285 866 100.

CD ROM Europe 21-23 May

At the Novotel, Hammersmith, London

Info: 071-60535

Virtual Reality 31 May

At the Conference Forum, London. Info: 071-931 9885.

DB-IMC 91 2-4 July

The European image processing exhibition/conference at the Wembley Conference Centre, London. Info: 203 226 6997.

PC World Forum 9-14 July

In Moscow. Info from Tenecon Co. on 010 1 508 828 8122.

The International 16-bit Computer Show

12 July

The 16-bit Computer Show, for Amiga, Alan and PC users, is now in its tenth incarnation. Like the previous one, which attracted more than 150 exhibitors and 21,000 visitors, it will be held at the

Novotel Hotel, Hammersmith, London.

Visitors can try out and buy just about any hardware and software. Many new products are also expected to be launched, both in the home entertainment and professional areas.

So far 100 companies have booked space, including Amstrad, Checkmate, GFA, Data Media, Hi-Soft, Memory Expansion Systems, Precision Software and Romsoft. Another 40 to 50 are expected.

Advanced Logic cost £3, call 0706

68020. Admission on the door is £5.

The Leadstar Computer Extravaganza 13-15 Sept.

At the New Exhibition Centre at Leeds University. Info: 0532 677 657.

Image Processing 31

28-31 Oct

NEC, Birmingham. Info: 081-888 5933.

Computer Graphics 1-3 May

At the Alexandra Palace in London. Info: 081-888 9393.

Desktop Pub 91 5-7 May

At the Alexandra Palace in London. Info: 081-888 9383.

Computing in the City 13-14 Nov

At the Barbican Centre in London. Info: 081-888 4486. ■

Golden Moments

• God may not be a computer, but he certainly gets some help. It was a year ago this week when Express reported the computerisation of the Vatican. (See Telephones, investing and warehousing (where the inverse is kept, presumably) are all controlled by a collection of Dell SPUs and PCs.

"Man's pre-eminence over machines must be remembered," said the Pope on a visit to Oxford.

• This time last year also saw the first civil action being taken under the Data Protection Act.

Neil Foster decided to take proceedings against the Home Office and Williams Police Force after being wrongfully arrested and charged with driving while disqualified, incurred. Information on your computer had led them to the wrong man.

Thankfully, after four months of work, Neil managed to track down the real culprit and clear his good name, but not before losing his job, car and savings and being threatened with a prison sentence. It makes cast-iron failures seem a bit more palatable.



• The Av - disappointing plots.

• It was two years ago when Acorn released the 'cheap' version of the Archimedes machine, the A3000.

It is the only home computer to use the advanced RISC (Reduced Instruction Set) style processor, a system which sacrifices some of the obscure machine code instructions in favour of incredible speed benefits. It also has high-resolution colour graphics and a sophisticated multi-tasking operating system.

It was priced at £699 without a monitor - a figure which disappointed many industry pundits, hoping for something more competitive. Looking back, it now looks like a mistake: the Archimedes certainly hasn't taken off in the way it deserved.

MEL CROUCHER: TEN YEARS AFTER

was some controversy that the prize didn't exist.

Mel: Oh, yes I'll little talk. Yes, two school teachers in Yorkshire won the golden diamond. It took them two years. It's been written the stories sound track for *Close All Windows*.

Mel: Me, with Ian Dury, John Pertwee and Franke Howard. You could say it was the first celebrity endorsement of a computer game.

• When you happy with its success?

Mel: Well, since it was sold mostly through mail order, it did pretty well. When you look at games today, they sell say five thousand copies. By the time shape, distributors and publishers take their cut, they can't be earning much more.

Anyway, with a Spectrum and a tape recorder, what can you expect? In about two years' time there'll be machines ready for it. CDTY looks interesting...

• What have you been doing since?

Mel: Journalist, writing books, consultancy work. I did a Dispatches program for Channel 4 on computer crime. What's it like now?

Mel: Well, the graphics and sound are very flashy, but the game play is often s.t. It's

SOFTOGRAPHY

Title Publisher Year

Can of Worms Automata 81

Piranha Automata 82

Graffiti Automata 82

Deus Ex Machina Automata 84

still ping pong and chess. Everybody's playing so well. The machines are good, though. If used to be that software led the industry, now it's the machines.

• What's got you up to it the moment?

Mel: Paul Cooper and I have teamed up for the first time in six years; and I can't wait to get back in and innovate. The Piranha is back, now called Guromon and living in France. In a few weeks we'll be launching a whole series of game modules, each with a price: air tickets, cars, that sort of thing. The big one will be a chesssite in France.

We'll probably get lynched, because it's all PD. But the software industry has been good to me in the past. I'd like to give it something back. Share and enjoy.

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The Express guide to computing at the grass roots level this week featuring Public Domain libraries.

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OBsolete COMPUTER CLUB – Established 1980 to preserve and support pre-1986 micros. Applications in writing to Mr S

Watson, 42 Achilles Road, London NW6 1EA stating system details, date and history. All systems, micros and mini's.

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FANZINES

JAM – see Spotlight panel.

THE DISK – Issue Two for Amiga users. See Express 129 PD column for full review. Packed with articles and PD. Send £1 for Disk Two or stamp for a leaflet to Steven Lord, 8 Stubbings Brink, Hobden Bridge, West Yorkshire HG7 6LR or tel 0422 844215.

AMOEBA QUARTERLY – Amiga fanzine (with cover disk). Send SAE to 369 Wanstead Park Road, Ford, Essex IG1 3TT for free details now. (Please)

CVu – The journal of the C Users Group (UK). Volume Three, issue four (May) is now. Price £2 for 60 pages. Write to Francis Glassborow, 93 Southfield Road, Oxford OX4 1PA.

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Stedona PDL sent a pretty nifty piece of shareware my way this week. It's an ST game for those bulb and icons alike. Does anyone remember Jeff 'Yuk' Miser? That hairy bearded Alan programmer with a dubious grip on reality? He has surprised us time and again with his colourful shoot-'em-ups and incredibly weird psychadelic programming techniques.

More famous even than his programming skill, is his fascination with llamas, camels and all things hairy. He comes up with some pretty bizarre ideas: past games include *Revenge of the Muham Camel*, *Colourspace* and many other weirdo creations.

Now Miser has really outdone himself. His piece de resistance comes in the form of *Llamatron*. To understand the concept of *Llamatron* you need to know only two things.

One: Kill everything.
Two: If it doesn't die, pick it up.



* *Llamatron: Very strange but tons of fun.*

THE PD COLUMN

Mild mannered reporter by day, PD nut by night, Frank O'Connor checks out the latest and greatest Public Domain Software. This week: Llamas, music and light...

Based on the ancient Williams concept *Robotron*, you will be guided the Uanna space around a screen absolutely infested with 32 manner of bizarre alien weirdos. You're not just taking pointed shiny green lizardmen. Oh no, you have to deal with romping Coke cans and hasted vicious Mandelbrot sets.

You can fire your powerful laser in any direction, blasting the crowds of nasties. They will follow you around, often coming you in the most hellish confines of the screen. All the bad guys behave in very different ways. Most follow you around stupidly, but many perform acts of completely ultra violence. Exploding shotgun masters are hard to avoid.

At various points you can rescue stranded baby llamas, towing them behind you to safety. Safety comes only when you have obliterated everything on the screen. Some of these llama sprigs bestow extra weaponry upon your overworked sprite, three way shots and

smart bombs being especially useful.

This game is frantic because there is so much happening on screen at once. Getting used to the sensory overload this game presents takes some doing, but once you get the hang of it, the mindless carnage is quite exhilarating. No moral worries either, I mean, who cares if a Mandelbrot Set gets killed? No-one there who quite rightly so.

The graphics are absolutely perfect;

'Pace is frantic and the mindless carnage is exhilarating'

colourful, fast and detailed. The sprites are gorgeous, full of character and perfectly descriptive of the twisted workings of Jeff Miser's unusual brain.

Special mention must go to the sound produced by the ST while this game is running. Some of the most



* *There aren't too many rules to break*

impressive samples you will ever hear blast from the monitor as you play. Better sit plug it into a stereo to hear the blood curdling screams as the Coke cans smash it, or your own death cry.

Considering this is a shareware program, you would have to be mad to miss out. Especially as "subscribers" receive a bundle of goodies including a free game. *Llamatron* is a genuinely outstanding offer.

I advise all ST shoeshine-ers to check this baby out without delay.



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Note that Amiganuts United hold the worldwide copyright to the program and it will not be available through any other source.

The program is of such high quality that we could easily have put it on sale for £50 or more! However, Amiganuts and the Author, Teijo Kinnunen, want it to be within the reach of all Amiga enthusiasts, so we are keeping the price down. You can purchase this great program for only £10.00, within Europe, (£15.00 rest of the world). The price includes return post and packing. Payment in pounds sterling only, if ordering from overseas, send a bankers order/Buchoque etc. (Credit card orders will not be accepted). Because of the exceptionally low price, it comes without glossy packaging and one page of printed documentation. (Instructions on the disk)

Please note that you are advised not to purchase this program if you only have the basic half-meg, as it does hog a lot of memory. A full instruction manual for this program may become available later, but due to the high costs involved, it will be quite expensive!

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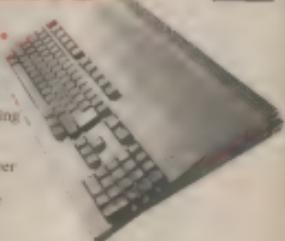


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SOFT DRIVING

Route planning software allows you to choose where you are going from, where you'd like to go to and then does the hard work like calculating the best route for you to take.

Autoroute Plus 4 offers a host of new bells and whistles and brings the program into the era of pull down menus and mouse control. The basic package includes a digital map of Britain, France or mainland Europe and the program to calculate routes in miles or kilometers and cost them in any currency for various vehicles. When working out routes the program tries as many as the memory of your PC will allow and highlights the quickest and shortest ones. A version is also available that works on a network.

SUCCESS STORY

When software house NetBase introduced *Autoroute* on the PC in 1987, it was an immediate success. It offered a quick and reliable way of calculating a route. In its original and basic form it offered an entertaining program that did a useful job, was state-of-the-art at the time and would run on a twin floppy PC.

As people asked NetBase for more features an updated *Autoroute Plus* was introduced. This was designed so that various add-on modules could be used to customize the program to the user's individual requirements. *Autoroute Plus 4* is the logical development of this route planning software incorporating a radical rethink making it more user friendly and improving the display which is now white with the roads and features in similar colors to a road atlas. Mouse control and pull down menus make it easy to use so that a beginner can have the program running in minutes.

INSTALLATION

To install the program, you put a disk in the floppy drive and type HDINST. On-screen prompts take you through disk swapping while your hard drive takes in the data.

After it has installed the main program, it asks if you have any modules or the like to load. If you think the job of installation is done and type 'N', you will get a surprise — there are no maps and the program is unusable. The maps have to be installed with all of the extra modules and so must be considered an extra. It's a pity that a professional program has such a hiccup in the installation procedure. However, the instructions in the manual included the extra disks, but the on-screen prompts were not as lucid as they could have been.

All of the modules can be installed in the same way from the same menu and the total time taken to install *Autoroute Plus 4* with UK and European map data and a couple of extra modules was around 25 minutes from opening the box to firing up the program.

Route planning software can be entertaining as well as productive. Keith Pomfret gets behind the wheel and test drives *Autoroute Plus 4*, the latest version of the program that started it all...



• John O'Groats to Lands End. Six routes and you're spoilt for choice in *Autoroute Plus 4*.

• All roads lead to the Watford Gap. The Express Corridor Blue tour for motorway geeks.

GOING PLACES

Eating as a life-science coupled with a healthy dislike of *Corridor Blue* had as planning the food fantasy of the nineties. To put *Autoroute Plus 4* through its paces, a lap round 31 of Britain's motorway cafés was planned.

As a second course (but not one the editor would bankroll) a similar trip around mainland Europe pushing *Autoroute Plus 4* to its 99 stop over limit was tried. The program allows you to break your journey for any length of time, at up to 99 places. It can also take into account the working day and restrict travel to specific hours.

Back is the first course. The journey started at Farning Corner (near Madstone) on the M2 and finished at Taddington (near Luton Airport) on the M1. Normally this straightforward 60-mile motorway journey would take no more than an hour and 15 minutes. With a round trip and a detour to call and wave at the motorway cafés, though, it was destined to take a little longer. Allowing long enough time to dash from the car to the restaurant and take a longing look at the motorway tynes, the whole slay tour of the caffs was timed at 16 hours and 30 minutes. This was a simple enough route for the program to calculate and the office Goldstar 386 PC churned out a route in seconds. We decided to give it something a bit more complicated — John O'Groats to Lands End should put it to the test. On the first attempt using the European Gazerete a bug was discovered which had us catching ferries and travelling the length of Ireland to get to Cornwall.

A call to NetBase's marketing director, Simon Anthony, confirmed that there was a problem in the early review version of *Autoroute Plus 4* that had been given but that it had been fixed in production versions.

Another useful feature in *Autoroute Plus 4* is a

menu of "slide" controls that allows you to make your choice of preferred roads. While calculating John O'Groats to Lands End, there were a lot of motorways on what was supposed to be a scenic drive. A preferences feature available from a pull down menu allowed us to change the way the route was calculated to avoid motorways and A roads. With motorways the journey was 875 miles and took nearly 16 hours. The pretty route was 28 miles further and took 35 hours to drive.

AT THE END OF THE ROAD

Autoroute Plus 4 is a well specified core program that can be configured and upgraded to the requirements of most users. With the European database and a few modules, it can eat a serious lump out of the budget, but any company planning reps rounds or deliveries will save the cost in saved fuel and tedious distances.

Up until last year *Autoroute* had the territory to itself, but with the advent of *Navigator* from DPS and other PC route planners still to come, it is now holding its own in an increasingly competitive field. ■

SYSTEM STUFF

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• **WOLE SAM**
• **13 FAIRY BOWELS**
• **SHE LOVES CLAMMING**
• **WINDOS**
• **FEAT MY DRAKE**
• **extinct any of the**
• **sovereigns**
• **Chack**
• **unreliable without**
• **sanitized supply of**
• **energy**

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POLYMER LETTERS

HELP! HELP! HELP! HELP! DO ME A LEMON HELP! HELP! HELP! HELP!

Bad luck, eh? But fear not, for we may well be able to help – with anything game-related anyway. Simply jot down as much detail as possible on exactly what the problem is and send it to **DO ME A LEROM**, Games Week, New Computer Express, 30 Ilfracombe Street, Bath, Avon BA1 2BW.

Maybe it's a certain problem that's causing you to

scream. Maybe it's a certain screen that's causing you problems. Or perhaps you simply need a sleep mode. Whatever the score, personal replies are out of the question, but we will endeavor to answer as many queries as possible through these pages. And don't forget to mention the game's title (book, if it happens). This week's *thorn* is located in the side of Steven Baker's

Eastbourne. He's stuck on Mission Six of Vektor Graffix's *Killing Cloud* because he has no nets or pick up vehicles and wants to know why. Well, Steve, according to Vektor's Peta Featherstone the problem could be down to one of two reasons: either you have run out of nets completely or the vase have run over the pods that were placed. Hope that clears the mist of confusion.

PREDATOR 2 THE HUNT CONTINUES...

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Private investigator Amos Gantley is in the grip of a highly hot-headed gang of Colombian and Jamaican cartels fighting it out on the streets for control of the lucrative drug trade. And to add to his woes, an alien hunter known as the Predator has just arrived for a spot-of people-killing fun. Enter LeLoe Neoprene and Dennis Gentry as hard-edged cops Harrigan and the only man capable of cleaning up this town. The Predator 2 for you, currently doing the rounds now available in stores and through computer game stores.

Spaced thirty-over four levels which represent the cuts of the film's story, *Predator*'s magnetic media action is Operation Tyrell blasting plain and simple. As the scenario scrolls on by, doses of gun-toting members of the drug-bacana' gang spring forth and slay rip with bullets and grenades, and innocent bystanders are blown to hell and back. Take a look at the background here.

With some form of Hacking capability to shoot the bad guys without hitting the honest citizens, it's as simple as that. That's a lie actually, for more often than not there are so many rotten apples on screen that it's difficult not to shoot the Good People. Worse still, the process of getting rid of them can be somewhat like killing bitches.

But what of the Predator itself? Well, you don't actually get to take it on until the final level—*(Caveat: you can't take it on until the final level, the book was written before the game was released)*.

occasionally picks off 1 bad egg or two. Such is life. Predator 2 isn't particularly rewarding to play, which is a great pity as the potential of the horizontal elongated playfield to represent peripheral vision has been wasted. I haven't seen the film yet, so maybe they just isn't enough for it to engage my piping gremlins. Maybe licensing restrictions are to blame. Whatever the reason, it's not going to make this baby an instant classic.



Disney boy does his best to keep the bad boys at bay, in the American version of *Predator 2*.

• *Horizon dishes out doses of death with a surprisingly weak, 45-Megawatt plant. At least it has an unlimited supply of consumers—the four most powerful weapons found close the wire don't.*

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SEVENTH HEAVEN

It's been a long, long time coming but Apple finally released System 7 to a waiting world this week. And the early indications are that it has been well worth the wait. Apple has made what many see as the decisive move in the user interface battle, guaranteeing that it will be years before the likes of Microsoft's Windows can claim to offer the same sort of functionality.

For until Windows appeared – and, realistically, until Windows 3.0 hit the scene – PCs could rightly be seen as coming a very poor second to the Mac in the user interface battle. Windows 3 changed that to some extent – Mac users still claimed that their machine's interface was superior, but at least PC users had something to argue with. So, just how much better is System 7 than Apple's previous operating systems and is the Mac once more firmly at the forefront of the user interface race?

The first thing that you notice when booting up a Mac running System 7 is that the interface's visual look has changed somewhat. While not going overboard, the designers have decided on a semi-3D appearance, which makes things like scroll bars and zoom boxes look much better than the old-style, black-and-white versions. Unfortunately, users of more Macs – like the Classics, Plus and SE – will have to make do with the old look – the new appearance is only for those with greyscale or colour monitors. And, sadly, the new look does not extend as far as the dialogue boxes – they are just the same as they always were; at least, they are at present, although it's up to programmers to decide if they remain that way or if they will change to fit in better with the new look of the rest of the interface.

The Mac now permanently runs a new version of MultiFinder, called the Process Manager. MultiFinder was Apple's solution to some form of multi-tasking on the Mac, and was loved by some users and hated by others. The Process Manager is a far more sophisticated beast, and allows a far higher degree of multi-tasking – but only for those programs which make

Over two years in development, the Apple Macintosh's new System 7 operating system has finally arrived. Ian Wrigley takes a close look at the front-end to end all front-ends...

use of its facilities, which means that those currently available are unlikely to multi-task any more than they do at present.

UP UP AND AWAY

To fit in with the image of the Macintosh as a user-friendly machine, System 7 has something called 'Balloon help', which can be switched on or off at any time, by selecting a menu choice from an always-present icon on the menubar. When active, balloon help is continually sensitive; small 'speech bubbles' appear whenever your cursor points, telling you what each item does – not only menu choices, but also things like close and zoom buttons, scroll bars, the wastebasket and so on. New programs written to take advantage of System 7 will have support for balloon help built in, so that, for example, turning help on in a part package will enable the user to point to the painting tools and get a description of exactly what each one does without having to resort to the manual all the time.

Some programs already implement a context-sensitive help system of this kind, but Balloon help will mean that all applications will, in future, implement help in the same way – another example of Apple's philosophy that all programs should appear as similar as possible to the user, to reduce the time spent learning a new application.

GET CONNECTED

An area that Apple has struggled very strongly with System 7 is networking. This is an area where Macs have always been prominent – unlike PCs, which

require an extra plug-in card to network together, Macs have a built-in network called LocalTalk. But until System 7, users had to use either free software such as Public Folder or Apple's own AppleTalk software to take advantage of the networking. But now, each Macintosh on a network can appear to other users as a Reservoir, meaning that files and even applications can be shared by any Mac on the network.

A Mac's user can decide which files or folders should be shared, and can allow only certain users to connect to them, password-protecting some or all of the files. And at this comes at no extra cost – Macs are automatically networked together simply by connecting them to a printer; there's no extra cable to buy, and no interface cards required.

DATA TRANSFER

When the Macintosh first appeared, Cut and Paste were fairly radical concepts – suddenly, users could transfer data from one application to another without worrying about file compatibility and the like. System 7 takes this idea a step further with Publish and Subscribe – which can be likened to 'live' Cut and Paste.

Rather than copying data from an application to the clipboard, a user can choose to 'publish' a selection of data from an application. Any other application which supports the protocols (and almost all new applications will) can then 'subscribe' to the data, which appears rather like it would if it were pasted from the clipboard. But if the data is changed in the publishing application, that change is echoed through to the subscribers, meaning that the data is always up to date. So, for

INSTALLING FONTS

One of the major complaints that Macintosh users have always had is that installing fonts is such a complicated business. You had to put the printer font files into the System folder, along with the ams file if you had any applications which used it. Then came the nightmare of Font/DA mover: Would the font install, or would the Mac

crash – sometimes damaging the System file itself so that it had to be re-installed?

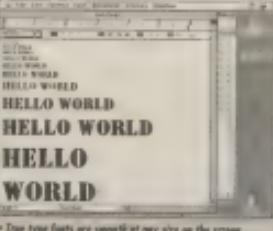
System 7 solves all these problems with the introduction of a 'smart' system folder, an easier way of installing fonts, and best of all, the introduction of the new TrueType font technology. Installing fonts is now a

simple, one-step process: just drag the font to the System folder, and the Mac will do the rest.

If you are still using PostScript fonts, you also still

need to put the printer fonts into your System folder, but

you can at least put them into a sub-folder, keeping the System folder tidy.



Font need to be stored in the System file in order to be available to the Macintosh. Put "HelloWorld" into the System file.

Cancel OK

...and the Macintosh will do the rest.

Type fonts are smooth at any size or the screen...

HELLO WORLD
HELLO

...and smooth at any size when printed out.

SYSTEM 6 VERSUS SYSTEM 7

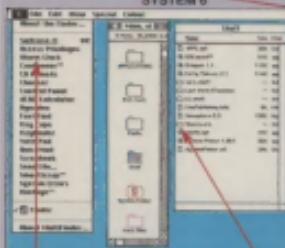
MultiFinder must be explicitly selected

In System 7, the colour menu has been replaced by 'label', although it does exactly the same thing: it allows the user to assign a colour to any file or folder

Balloon help is accessed from this icon

The Process Manager (the new version of MultiFinder) is permanently 'on'

SYSTEM 6



Only DAs can appear under the Apple menu

Windows have a strictly 2-dimensional

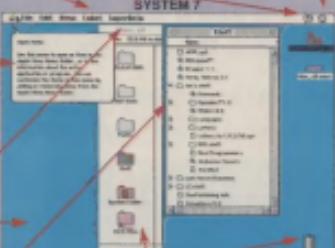
Only one level of files can be shown

Context-sensitive balloon helps guide the novice around the System. The Apple menu has also changed radically (but we can't show you as our screen grabber is incompatible with System 7)

In the release version of System 7, this menu will be called Special

Under both Systems 6 and 7, the Mac's desktop colour can be defined by the user

SYSTEM 7



Colour icons have been added to the System - as we have 3D-look windows

In the States, the wastebasket - where files and folders to be deleted are dragged - is called the Trash, as it is in our beta copy of System 7

Files and folders can now be 'shared' among Macs on a network

instance, if figures from a spreadsheet were subscribed to by a graphics program to create a pie chart of the values, then that pie chart would always be accurate - changing the numbers in the spreadsheet would change the pie chart. Microsoft says that it will produce a similar facility in the near future - probably in Windows 3.1 - but Apple has got there first. Indeed, there are already some applications using Publish and Subscribe - notably Class' new programs. Developers are being urged to implement Publish and Subscribe in their new applications and to upgrade existing ones; it won't be long before the majority of applications use this system to share data.

SMALL THINGS...

Some of the benefits of System 7 don't, at first glance, seem to be particularly spectacular. It's only after they have been used for some time that the true benefit becomes evident. For example, the Apple menu has changed radically. Whereas before only disk accessories could be accessed from the menu, now any application, file or folder can be set to appear in the menu, simply by placing it in the 'Apple menu items'

folder. Also, disk accessories can now be launched simply by double-clicking on them - so there is no difference between DAs and applications as far as the user is concerned.

Any Mac with a memory management chip (which means most of them except the Mac and the compact Mac) - Plus, SE, Classic and so on) can now take advantage of virtual memory. If you have a top-of-the-range Mac (a IIc or IIgs) and a large enough disk drive, you can fool your machine into thinking that it has a stunning four gigabytes of RAM to play with. For those with more modest needs, and a fair bit of hard disk space, a virtual 12 or 16MB of RAM is no problem (although Apple recommends that you limit this to double your actual RAM size, so if you have a 4Mb Mac, don't set more than another 4Mb of virtual memory - because of speed considerations).

Even small things like the way lists of files are displayed have been improved. Any folder's contents can be displayed without actually opening another window; simply by clicking on the small arrow next to the folder; the display will then expand to show the contents of the folder.

THE HISTORY OF SYSTEM 7 - AND WHAT'S NEXT?

System 7 was first announced over two years ago by Apple; since then its launch has been postponed numerous times due to 'technical difficulties' - indeed, few people actually believed the 13 May launch date until a few weeks ago when it became clear that Apple had increased the date to 1000 people for it to be postponed.

The programming is done by a team of software engineers at Apple's headquarters in Cupertino, California. The software team is led by people known in Apple terminology as 'Software Evangelists'. Yes, this is a genuine job title, which dates from the days of Steve Jobs, Apple's co-founder, who wanted people to think of Apple and the Mac as 'a way of life', rather than just another computer and product.

The release of System 7.0 is not, of course, the end

of the story. The software team will be spending the next few months tweaking the system as it goes through the inevitable releases 7.0.1, 7.0.2 and so on. Their attention will then turn to 7.1, which will contain a number of upgrades to features like Publish and Subscribe which will improve their functionality, as well as new features - one much-vaunted possibility is the inclusion of built-in electronic mail.

And, of course, System 8 is on the horizon. Although not yet officially acknowledged by Apple yet, it is inevitable that a new release of the System will occur at some time in the future. It's likely to be a couple of years before System 8 appears, but when it does, it will contain features such as true, full multitasking and quite possibly built-in 3D.

Watch this space for details...

THE FUTURE

System 7 means that the Mac's user interface is unquestionably the best available for small computers (the NeXT machine doesn't really fall into the 'small computer' category). Windows has a long way to go before it can even equal the new standard set by Apple, while interfaces like those on the ST and Amiga are left well and truly in the shade.

And it doesn't stop there. Rumour has it that when asked about the progress of System 7 over the last few months, programmers at Apple's Cupertino headquarters replied: 'System 7? Hell, we're working on System 8 already!' ■

MACINTOSH JARGON

APPLICATION: programs are known as applications in Mac circles.

DA: short for Disk Accessory, a mini-application which, prior to System 7, could only be run by accessing it from the Apple menu. Typically, things like calculators were DAs, since they can be easily accessed while another program is running. To some extent, MultiFinder made DAs less necessary. In System 7, a DA can be run by double-clicking it, in the same way as any other application.

DOCUMENT: Mac-speak for 'file'. Any file created by an application is known as a document.

FOLDER: a folder on the Mac is the equivalent of a subdirectory on most other computers. Files, applications and other folders can be placed in folders.

MULTIFINDER: the Mac's solution to multi-tasking. When MultiFinder is running, more than one application can be open at once.

WASTEBASKET: files and folders are deleted by dragging them in the wastebasket. Then, when 'Empty wastebasket' is selected from the 'Special' menu, the file is deleted.

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Music mouse is a program that allows the user to produce complex musical arrangements using either the Amiga's internal sounds, samples or a full MIDI orchestra; if you fit a MIDI interface and connect it to modules.

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1) What did O and A Level stand for?

- a) Open and Assessed
- b) Only and Also
- c) Ordinary and Astigmatism
- d) Ordinary and Advanced

2) What computer language was used as the basis of the Amiga operating system's development?

- a) Basic
- b) BCPL
- c) C
- d) Belgian

3) What add-on could you use with a MIDI port?

- a) A MIDI hi-fi system
- b) A vacuum cleaner
- c) A synthesiser or sound module
- d) A digital iron iron

4) What company is there a little of in us all?

- a) Crosby Still Nash and Young
- b) Private Stock PLC
- c) Pataheope's sausages
- d) Commodore

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The bit of Commodore in me is

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- 4K Buffer
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- Advanced Paper Parking
- Advanced Paper Detection - 360x360dpi
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- Epson, IBM & NEC P4+ Emulation
- Advanced Paper Parking
- Advanced Paper Detection - 360x360dpi
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